CD Stereo Radio Recorder AZ1120 /00/01/05/10/11/14/17

Service
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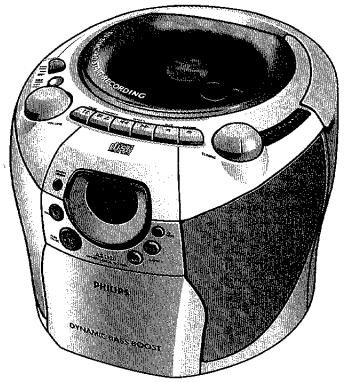
Service Manual 1918



Service Manual

COMPACT disc DIGITAL AUDIO

TABLE OF CONTENTS

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

CLASS 1 LASER PRODUCT

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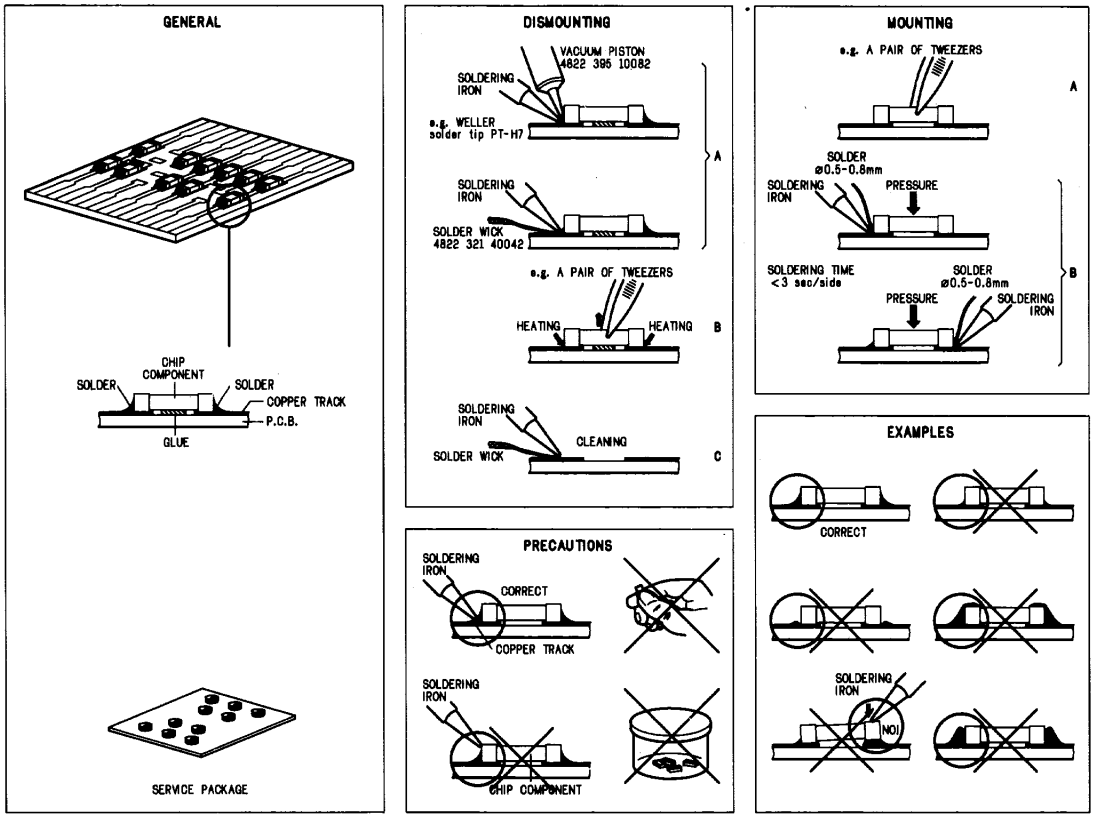
PCS 99 261

PHILIPS

HANDLING CHIP COMPONENTS



ESD

(GB) WARNING

All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools at this potential.

(F) ATTENTION

Tous les IC et beaucoup d´autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévite pourrait être considérablement écourtée par le fait qu´aucune précaution nést prise à leur manipulation.
Lors de réparations, s´assurer de bien être relié au même potentiel que la masse de l´appareil et enfileer le bracelet serti d´une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l´on utilise soient également à ce potentiel.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren.
Sorgen Sie dafür, dab sie im Reparaturfall über ein Puls-armband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(NL) WAARSCHUWING

Alle IC´s en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen vermindern. Zorg ervoor dat u tijdens reparatie via een polsband met wererstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione. Durante le riparationi occorre quindi essere collegato allo stesso potenziale che quello della massa delápparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

Anti-static table mat large 1200x650x1.25mm	4822 466 10953
small 600x650x1.25mm	4822 466 10958
Anti-static wrist band	4822 395 10223
Connection box (1MOhm)	4822 320 11307
Extendible cable (to connect wrist band to conn. box)	4822 320 11305
Connecting cable (to connect table mat to conn. box)	4822 320 11306
Earth cable (to connect any product to mat or box)	4822 320 11308
Complete kit ESD3 (combining all above products)	4822 310 10671
Wristband tester	4822 344 13999

(GB)
Safety regulations require that the set be restored to its originial condition and that parts which are identical with those specified be used.
Safety components are marked by those symbol. ⚠

(GB) WARNING

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

(F) ATTENTION

Les normes de sécurité exigent que l´appareil soit remis à l´état d´origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

(D) WARNUNG

Bei jeder Reparatur sind die geltenden Sicherheitsvor-schriften zu beachten. Der Originaizustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Original-ersatzteile zu verwenden.

(S) Varning !

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

(DK) Advarsel !

Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

(SF) Varoitus !

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

(NL) WAARSCHUWING

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkeliijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

(I) AVVERTIMENTO

Le norme di sicurezza estigono che l´apparecchio venga rimesso nelle condizioni orginali e che siano utilizzati i pezzi di ricambiago identici a quelli specificati.

(GB)
After servicing and before returning the set to customer perform a leakage current measurement test from all exposed metal parts to earth ground, to assure no shock hazard exists.
The leakage current must not exceed 0.5mA.

(F)
"Pour votre sécurite, ces documents doivent être utilisés par des spécialistes agrées, seuls habilités à réparer votre appareil en panne".

TECHNICAL SPECIFICATIONS

GENERAL

Mains voltage	-/00	:	230 V
	-/01/11	:	120/230 V
	-/05/10/14	:	240 V
	-/17	:	120 V
Mains frequency	-/00/05/10/14	:	50 Hz
	-/01/11	:	50 / 60 Hz
	-/17	:	60 Hz
Battery	mains	:	9 V (R14 x 6)
	Remote	:	3V (R03 x 2)
Power consumption		:	< 35 W
Dimension (W x H x D)		:	256 x 208 x 265 mm
Weight		:	3.2 Kg

AMPLIFIER

Output power	mains	:	2 x 1.6 W
	battery	:	2 x 2 W
Speaker impedance		:	2 x 4 ohm
Frequency response		:	100 Hz - 8 kHz (±3dB)

TUNER - FM SECTION

Tuning range	:	87.5 - 108 MHz
IF frequency	:	10.7 MHz
Sensitivity	:	< 22 dB at 26dB S/N
Selectivity	:	> 20 dB at ±300kHz
IF rejection	:	> 50 dB
Image rejection	:	> 20 dB

TUNER - AM SECTION

Tuning range	MW	:	522 - 1607 kHz
	-/17	:	520 - 1730 kHz
IF frequency		:	468 kHz ± 3 kHz
Sensitivity	MW	:	< 4000 µV/m at 26dB S/N
Selectivity	MW	:	< 16 dB
IF rejection ratio	MW	:	< 24 dB
Image rejection ratio	MW	:	< 28 dB

AUDIO CASSETTE RECORDER

Number of tracks		:	1 stereo
Tape speed		:	4.76 cm/sec ± 3%
Wow & flutter		:	< 0.48 % JIS UWTD
Fast wind/rewind C60		:	< 110 sec.
Frequency response	P/B	:	125 - 6300 Hz
S/N ratio		:	> 40 dB

COMPACT DISC

Frequency response		:	63 Hz - 16 kHz
S/N ratio		:	> 50 dB
Channel difference	1 kHz	:	< 3 dB
Channel crosstalk	1 kHz	:	> 26 dB
Laser wavelength		:	780 ± 20nm
Laser light power		:	< 0.3 mW

SERVICE TOOLS

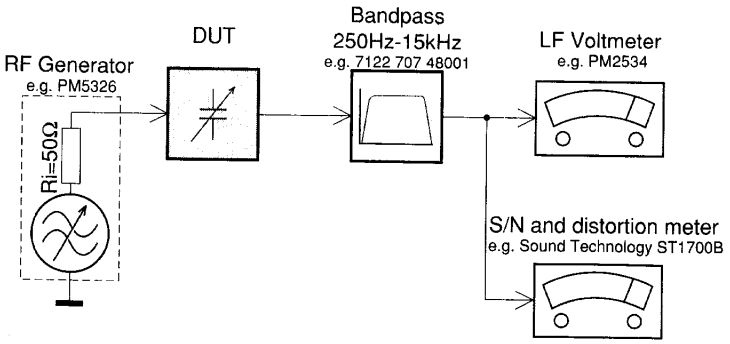
TORX T10 screwdriver with shaftlength 150mm.....4822 395 50423
TORX screwdriver set SBC 163.....4822 295 50145

Audio signal disc SBC 429.....4822 397 30184
Playability test disc SBC 444.....4822 397 30245
Test disc 5 (disc without errors) +
Test disc 5A (disc with dropout errors, black spots and fingerprints)
SBC 426/426A.....4822 397 30096
Burn in test disc (65 min. 1kHz signal at -30 dB level without "pause").....4822 397 30155

Universal test cassette Fe SBC 420.....4822 397 30071

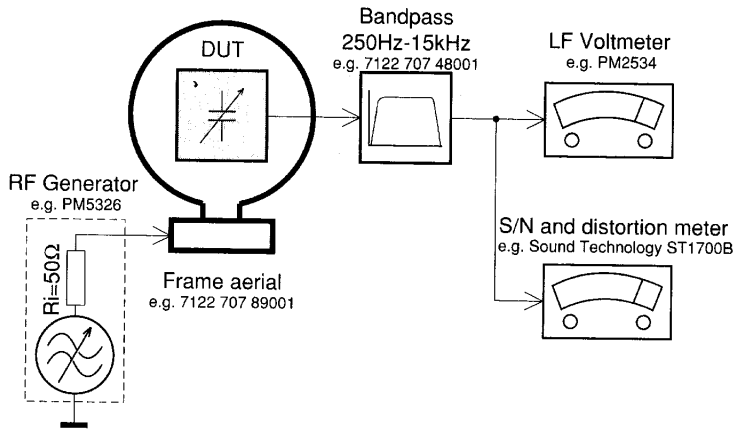
SERVICE MEASUREMENTS

Tuner FM



Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilottone (19kHz, 38kHz).

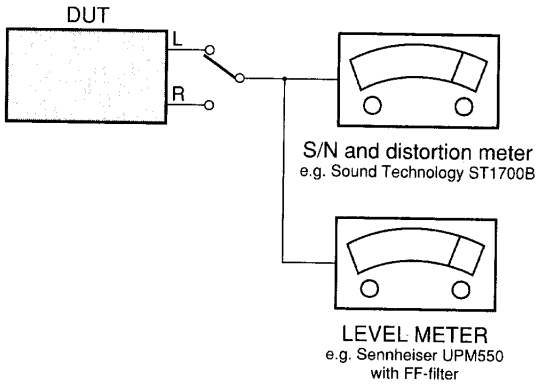
Tuner AM (MW,LW)



To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday´s cage.
Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

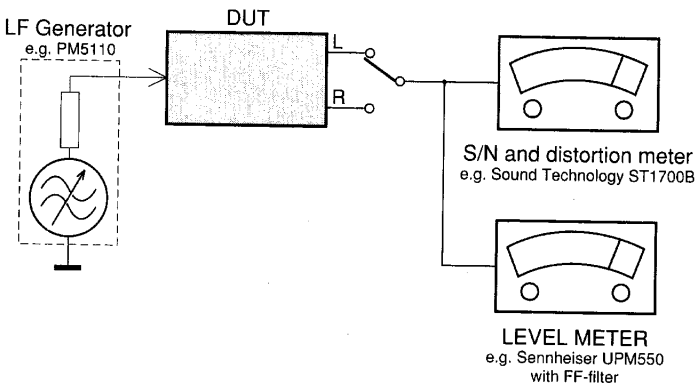
CD

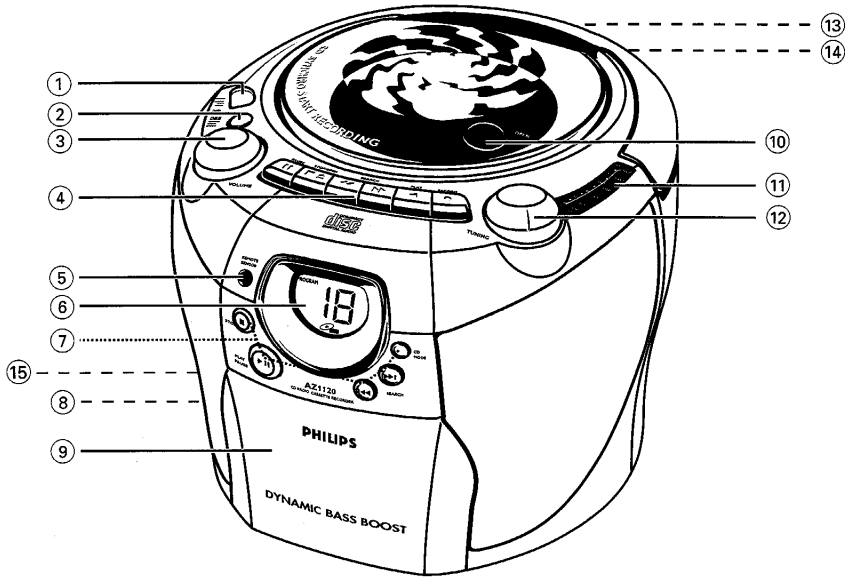
Use Audio Signal Disc SBC429 4822 397 30184
(replaces test disc 3)

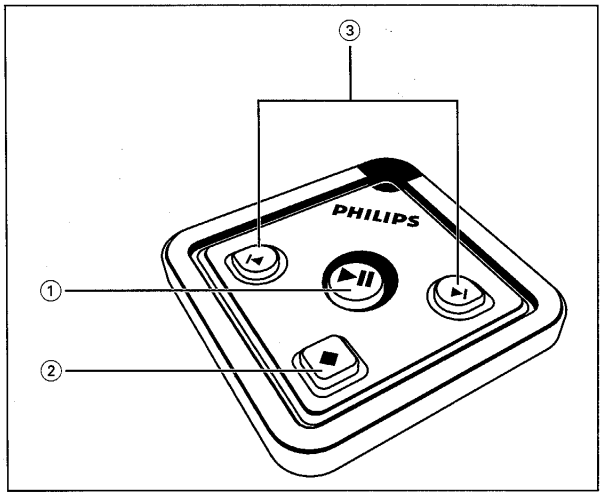


RECORDER

Use Universal Test Cassette **Fe** SBC420 4822 397 30071







TOP AND FRONT PANELS

① **Source selector:**
OFF/ TAPE, CD, BAND (FM/ AM) – to select source of sound, and also the power OFF switch

② **DBB (Dynamic Bass Boost)** – to enhance bass response

③ **VOLUME** – to adjust the volume level

④ **CASSETTE RECORDER**
PAUSE ⏸ – to interrupt recording or playback
STOP•OPEN ■ ▲ – to stop the tape and to open the cassette holder
SEARCH ◀◀ or ▶▶ – to fast wind / rewind the tape
PLAY ◀ – to start playback
RECORD ● – to start recording

⑤ **Remote sensor**

⑥ **CD display** – to show the CD functions

⑦ **CD PLAYER**
STOP ■ – to stop playback
PLAY•PAUSE ▶⏸ – to start or interrupt CD play
CD MODE – to select a different play mode; to program and review programmed track numbers
SEARCH ⏮/⏭ – to skip or search a passage/ track backwards or forward

⑧ 🎧 – 3.5 mm headphone socket
Note: Connecting headphones will mute the speakers

⑨ **Cassette compartment**

⑩ **OPEN** – to open/ close the CD door

RADIO

⑪ **Tuning dial pointer**

⑫ **TUNING** – to tune to radio stations

BACK PANEL

⑬ **Telescopic antenna** – to improve FM reception

⑭ **Battery door** – to open the battery compartment

⑮ **AC MAINS** – inlet for power cord

REMOTE CONTROL

① **▶⏸** – to start or interrupt CD play

② **■** – to stop playback

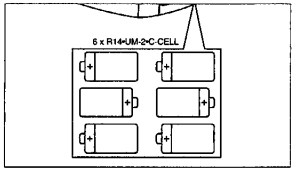
③ **⏮/⏭** – to skip or search a passage/ track backwards or forward

Environmental information
All unnecessary packaging material has been omitted. The packaging can be easily separated into three materials: cardboard, polystyrene and plastic.

Your set consists of materials which can be recycled if disassembled by a specialized company. Please observe the local regulations regarding the disposal of packing materials, dead batteries and old equipment.

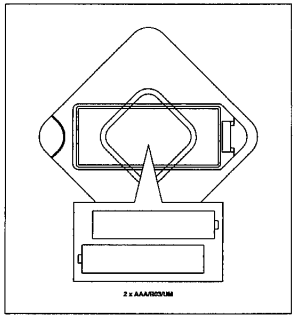
Whenever convenient, use the power supply if you want to conserve battery life. Make sure you remove the plug from the set and wall outlet before inserting batteries.

BATTERIES (OPTIONAL)



1. Open the battery compartment and insert six batteries, type **R-14**, **UM-2** or **C-cells**, (preferably alkaline) with the correct polarity as indicated by the "+" and "-" symbols inside the compartment.

Remote control (supplied)
Open the battery compartment and insert two batteries, type **AAA**, **R03** or **UM4** (preferably alkaline).

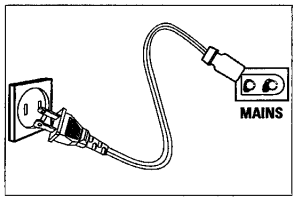


2. Replace the compartment door, making sure the batteries are firmly and correctly in place. The set is now ready to operate.
– *Incorrect use of batteries can cause electrolyte leakage and will corrode the compartment or cause the batteries to burst. Therefore:*
  – *Do not mix battery types,* e.g. alkaline with carbon zinc. Only use batteries of the same type for the set.
  – When inserting new batteries, do not try to mix old batteries with the new ones.
  – Remove the batteries if the set is not to be used for a long time.

Note: *The battery supply is switched off when the set is connected to the mains.*

Batteries contain chemical substances, so they should be disposed of properly.

Using AC POWER



1. Check if the power voltage ***as shown on the type plate located on the base of the set***, corresponds to your local power supply. If it does not, consult your dealer or service center.
2. Connect the power cord to the MAINS outlet and the wall outlet. The power supply is now connected and ready for use.
3. To switch off completely, withdraw the power cord from the wall outlet.
– Disconnect the power cord from the wall outlet to protect your set during heavy thunderstorms.

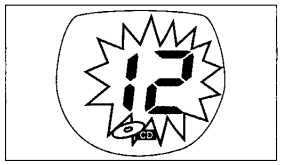
The type plate is located on the bottom of the set.

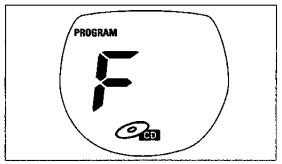
Radio reception

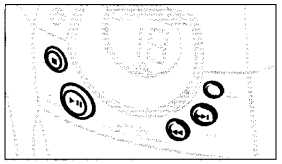
1. To select the desired waveband, set the source selector to **FM/AM**.
2. Tune to a radio station using the tuning knob.
– For **FM**, pull out the telescopic antenna. Incline and turn the antenna. Reduce its length if the signal is too strong (very close to a transmitter).
– For **AM**, the set is provided with a built-in antenna so the telescopic antenna is not needed. Direct the antenna by turning the whole set.
3. Adjust the sound using the **VOLUME** and **DBB** controls.
4. To switch off the radio, adjust the source selector to the **OFF/ TAPE** position (with the cassette keys released).

CD PLAYER

Display indication for CD functions:







– Total track number: in stop mode
– Current track number: during CD play
– Current track number flashes when on PAUSE
– **SHUFFLE/ REPEAT** modes: when the respective mode is activated
– **PROGRAM**: when active: P also appears briefly when you store a track
– no: no disc/ error in CD operation or with the CD (see Troubleshooting)
– F: program memory full

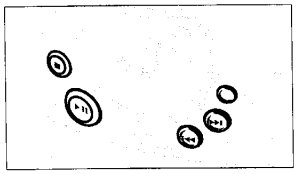
Playing a CD

1. Set the source selector to **CD**.
2. To open the CD door, press **OPEN** on the CD door.
3. Insert a CD with the printed side facing up and press the CD door gently close.
– The CD player scans the contents of the CD and the total number of tracks is shown.
4. Press **PLAY•PAUSE ▶II** on the set/ remote control to start playback.
5. Adjust the sound using the **VOLUME** and **DBB** controls.
6. To interrupt playback press **PLAY•PAUSE ▶II**. To resume, press **PLAY•PAUSE ▶II** again.
7. To stop CD play, press **STOP ■** on the set/ remote control.
8. To switch off the set, adjust the source selector to the **OFF/ TAPE** position (with the cassette keys released).

Note: *CD playback will also stop when:*
– *you press the CD door open;*
– *the source selector is in* **OFF/ TAPE** *or* **FM/ AM** *position;*
– *the CD has reached the end.*

Selecting a different track

During playback, you can use the **SEARCH** keys to select a particular track.



– *If you have selected a track number in the stop or pause position, press* **PLAY•PAUSE ▶II** *to start playback.*

- Press **SEARCH ▶▶I** once for the next track, or press repeatedly until the desired track number appears in the display.
- Press **SEARCH I◀◀** once to return to the beginning of a current track.
- Press **SEARCH I◀◀** more than once for a previous track.

Finding a passage within a track

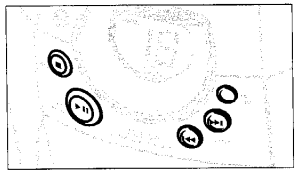
1. Press and hold down **SEARCH I◀◀** or **▶▶I**.

– The CD is played at high speed and low volume.

2. When you recognize the passage you want, release SEARCH.

CD MODE: SHUFFLE and REPEAT

The **CD MODE** button allows you to select 4 different play modes. The modes can be selected or changed during playback.



– **SHUFFLE** - all tracks are played in random order.
– **SHUFFLE REPEAT ALL** - repeats the entire CD in random order.
– **REPEAT** - plays the current track continuously.
– **REPEAT ALL** - repeats the entire CD

1. During playback, select your play mode by pressing **CD MODE** once or more until the desired play mode is shown.

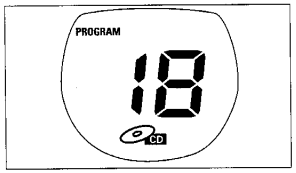
– You can use **SEARCH I◀◀** or **▶▶I** to skip tracks during **CD MODE** playback.

2. To return to normal playback press the **CD MODE** until the **SHUFFLE/ REPEAT** modes is no longer shown in the display.

– You can also press **STOP ■** to quit the play mode.

CD MODE: Programming track numbers

You may store up to 20 tracks in the desired sequence. If you like, store any track more than once.



1. In the STOP position, press **SEARCH I◀◀** or **▶▶I** for your desired track.

2. When your chosen track number appears, press **CD MODE** once to store the track.

– The display shows '*P*' briefly and '**PROGRAM**' followed by your selected track number.

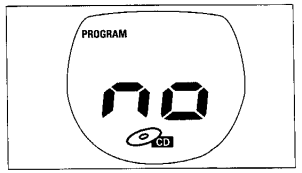
3. Repeat steps ***1.*** and ***2.*** to select and store all desired tracks in this way.

To review your set program

- In the stop position, press and hold down **CD MODE** for more than one second.
  The display shows all your stored track numbers in sequence.
- To play your program press **PLAY•PAUSE ▶II**.

Erasing a program

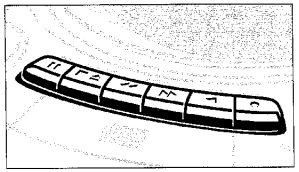
You can erase the contents of the memory by:



– pressing the CD door open;
– moving the source selector position;
– pressing **STOP ■** twice during playback/ in the stop position.

- The display shows '*no*' briefly and '**PROGRAM**' will disappear when the program is cancelled.

PLAYING A CASSETTE



1. Set the source selector to **TAPE**.

2. Press **STOP•OPEN ■ ▲** to open the cassette holder and insert a cassette.

3. Press the cassette holder shut.

4. Press **PLAY ◀** to start playback.

5. Adjust the sound using the **VOLUME** and **DBB** controls.

6. To interrupt playback press **PAUSE II**. To resume, press the key again.

7. By pressing **◀◀** or **▶▶**, fast winding of the tape is possible in both directions. To stop fast winding, press **STOP•OPEN ■ ▲**.

8. To stop the tape, press **STOP•OPEN ■ ▲**.

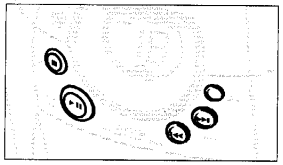
– *The keys are automatically released at the end of the tape, except if* **PAUSE II** *has been activated.*

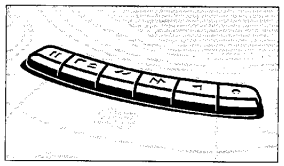
9. With the source selector in **OFF/ TAPE** position, the set is switched off when all the cassette keys are released.

GENERAL INFORMATION ON RECORDING

- Recording is permissible insofar as copyright or other rights of third parties are not infringed.
- This deck is not suited for recording on CHROME (IEC II) or METAL (IEC IV) type cassettes. For recording, use only NORMAL type cassettes (IEC I) on which the tabs have not been broken.
- The best recording level is set automatically. Altering the **VOLUME** and **DBB** controls will not affect the recording in progress.
- At the very beginning and end of the tape, no recording will take place during the 7 seconds, when the leader tape passes the recorder heads.
- To protect a tape from accidental erasure, have the tape in front of you and break out the left tab.
  Recording on this side is no longer possible. To record over this side again, cover the tabs with a piece of adhesive tape.

Synchro Start CD recording





1. Set the source selector to **CD**.
2. Insert a CD and if desired, program track numbers.
3. Press **STOP•OPEN** ■ ▲ to open the cassette holder. Insert a blank tape.
4. Press the cassette holder shut.
5. Press **RECORD** ● to start recording.

– Playing of the CD program starts automatically from the beginning of the program. *It is not necessary to start the CD player separately.*

6. For brief interruptions press **PAUSE II**. To resume recording, press **PAUSE II** again.
7. To stop recording, press both **STOP•OPEN** ■ ▲.

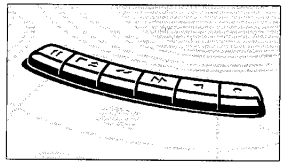
To select and record a particular passage

During CD playback, press and hold down the **SEARCH** buttons ⏮ or ⏭ to find your passage.

- Press **PLAY•PAUSE** ▶II to put the CD player on pause at the selected passage.

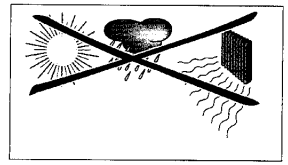
– Recording will begin from this exact point in the track when you press **RECORD** ●.

Recording from the radio



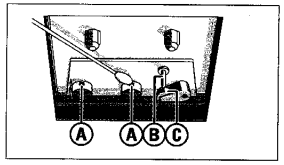
1. Set the source selector to **FM/AM**.
2. Tune to the desired radio station using (see **RADIO RECEPTION**).
3. Press **STOP•OPEN** ■ ▲ to open the cassette holder Insert a blank tape.
4. Press the cassette holder shut.
5. Press **RECORD** ● to start recording.
6. For brief interruptions, press **PAUSE II**. To resume recording, press **PAUSE II** again.
7. To stop recording, press **STOP•OPEN** ■ ▲.

PRECAUTIONS AND SYSTEM MAINTENANCE



- Place the set on a hard, flat surface so that the system does not tilt.
- Do not expose the set, batteries, CDs or cassettes to humidity, rain, sand or excessive heat caused by heating equipment or direct sunlight.
- Do not cover the set. Adequate ventilation with a minimum gap of 15 cm between the ventilation holes and surrounding surfaces is necessary to prevent heat build-up.
- The mechanical parts of the set contain self-lubricating bearings and must not be oiled or lubricated.
- To clean the set, use a soft, slightly dampened chamois leather. Do not use any cleaning agents containing alcohol, ammonia, benzene or abrasives as these may harm the housing.

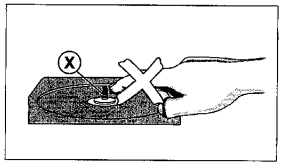
Tape deck maintenance

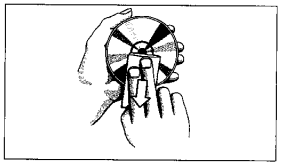


To ensure quality recording and playback of the tape deck, clean parts Ⓐ,Ⓑ and Ⓒ shown in the diagram below, after approx. 50 hours of operation, or on average once a month. Use a cotton bud slightly moistened with alcohol or a special head cleaning fluid to clean both decks.

1. Open the cassette holder by pressing **STOP•OPEN** ■ ▲.
2. Press **PLAY** ◀ and clean the rubber pressure rollers Ⓒ.
3. Press **PAUSE II** and clean the magnetic heads Ⓐ and also the capstan Ⓑ.
4. After cleaning, press **STOP•OPEN** ■ ▲.

CD player and CD handling





- The lens of the CD player should *never be touched!*
- Sudden changes in the surrounding temperature can cause condensation to form and the lens of your CD player to cloud over. Playing a CD is then not possible. Do not attempt to clean the lens but leave the set in a warm environment until the moisture evaporates.
- Use only Digital Audio CDs.
- To take a CD out of its box, press the center spindle while lifting the CD. Always pick up the CD by the edge and replace the CD back in its box after use to avoid scratching and dust.
- To clean the CD, wipe in a straight line from the center towards the edge using a soft, lint-free cloth. Do not use cleaning agents as they may damage the disc.
- *Never* write on a CD or attach any stickers to it.

If a fault occurs, first check the points listed below before taking the set for repair.
If you are unable to remedy a problem by following these hints, consult your dealer or service center.

WARNING: ***Do not open the set as there is a risk of electric shock! Under no circumstances should you try to repair the set yourself, as this would invalidate the warranty.***

PROBLEM
– *POSSIBLE CAUSE*
• REMEDY

No sound/power
– *VOLUME is not adjusted*
• Adjust the VOLUME
– *Headphones connected*
• Disconnect headphones
– *Power cord not securely connected*
• Connect AC power cord properly
– *Batteries dead/ incorrectly inserted*
• Insert (fresh) batteries correctly

Display does not function properly/ No reaction to operation of any of the controls
– *Electrostatic discharge*
• Switch off set, disconnect the power plug and reconnect after a few seconds

CD playback does not work
– *CD is badly scratched/ dirty*
• Replace/ clean CD (see MAINTENANCE)
– *Laser lens steamed up*
• Wait until lens has acclimatized

The CD skips tracks
– *CD is damaged or dirty*
• Replace or clean the CD
– *SHUFFLE or a program is active*
• Quit SHUFFLE/PROGRAM mode(s)

Poor cassette sound quality
– *Dust and dirt on the heads, etc.*
• Clean deck parts etc., see maintenance
– *Use of incompatible cassette types (METAL or CHROME).*
• Only use NORMAL (IEC I) for recording.

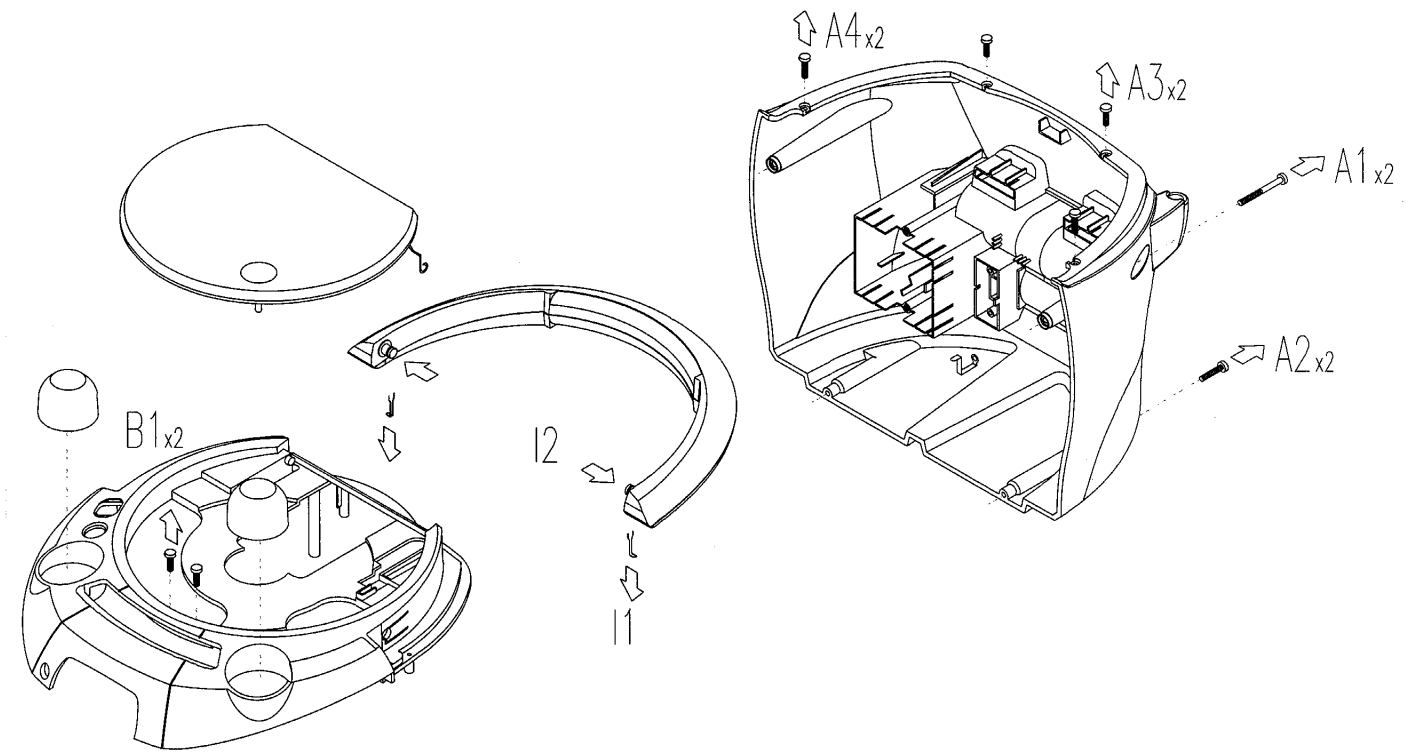
Recording does not work
– *Cassette tab(s) may be broken*
• Apply a piece of adhesive tape over the missing tab space.

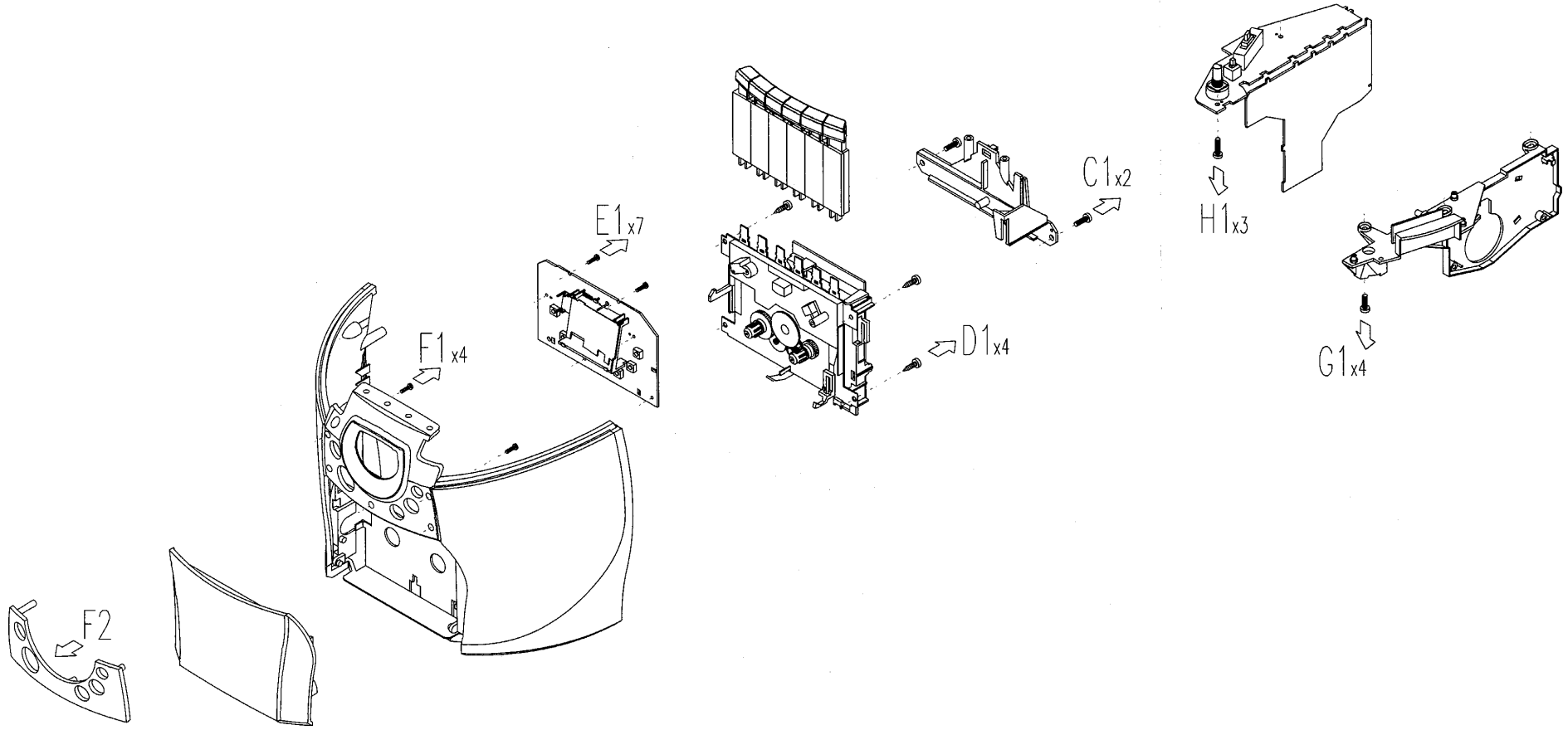
Remote control does not function properly
– *Batteries dead/ incorrectly inserted*
• Insert (fresh) batteries correctly
– *Distance/ angle between the set too large*
• Reduce the distance/ angle

DISASSEMBLY DIAGRAM

A. To remove Front Cabinet Assembly
B. To remove Top Cabinet
C. To remove Bracket PCB
D. To remove Tape Deck
E. To remove Front Board
F. To remove LCD Panel
G. To remove Tuner Bracket
H. To remove Main Board
I. To remove Handle

4-1





CD SERVICE TESTPROGRAM

- *STOP* button pressed in any step returns to begin of Service Testprogram.
- To leave Service Testprogram switch mode switch to off-position.
- Door switch is ignored → CD door can be opened.
- *Volume up/down* buttons function independentely of the service testprogram.

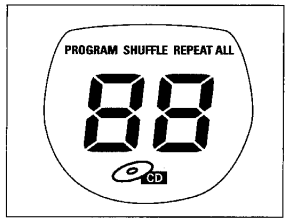
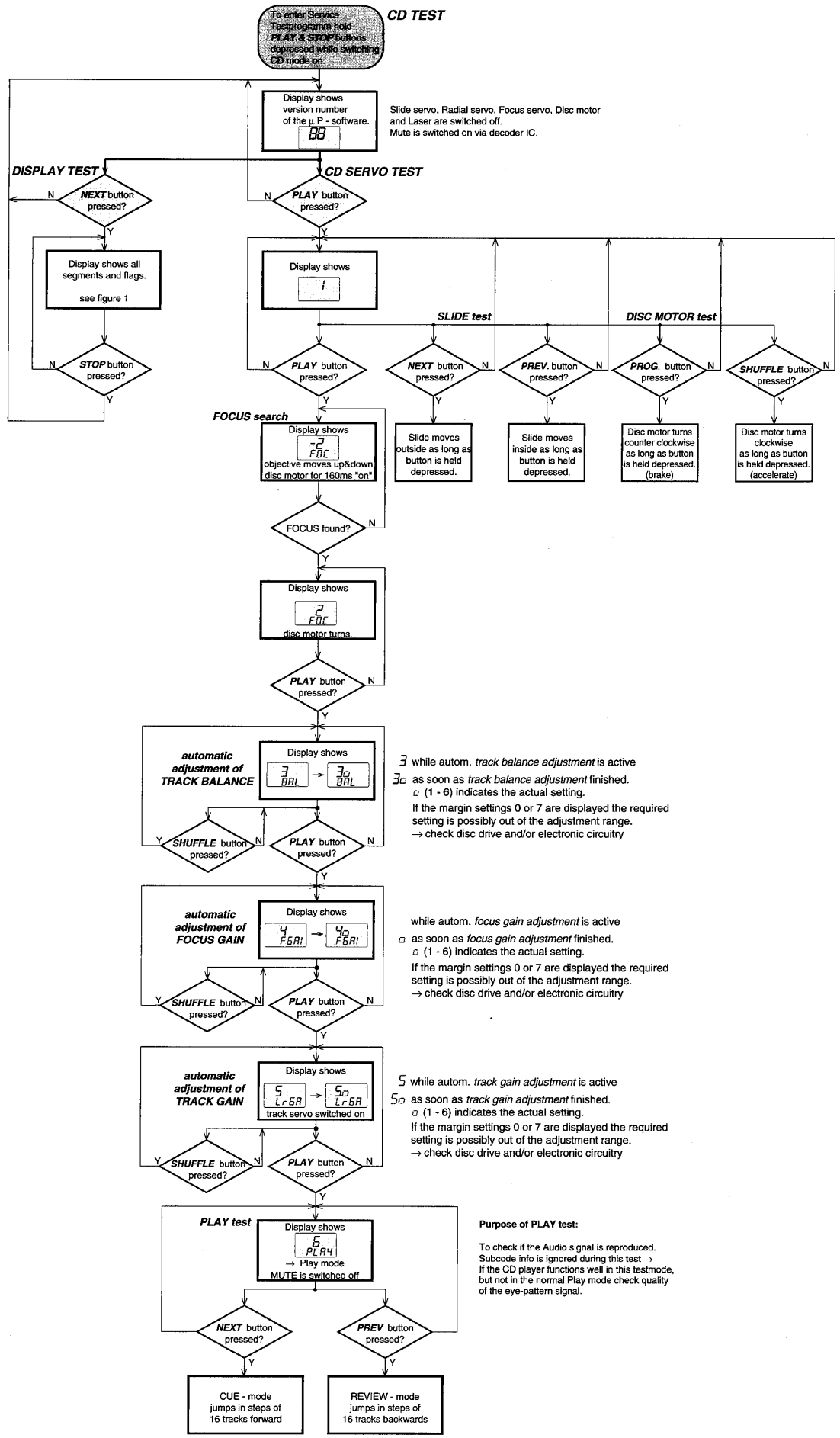
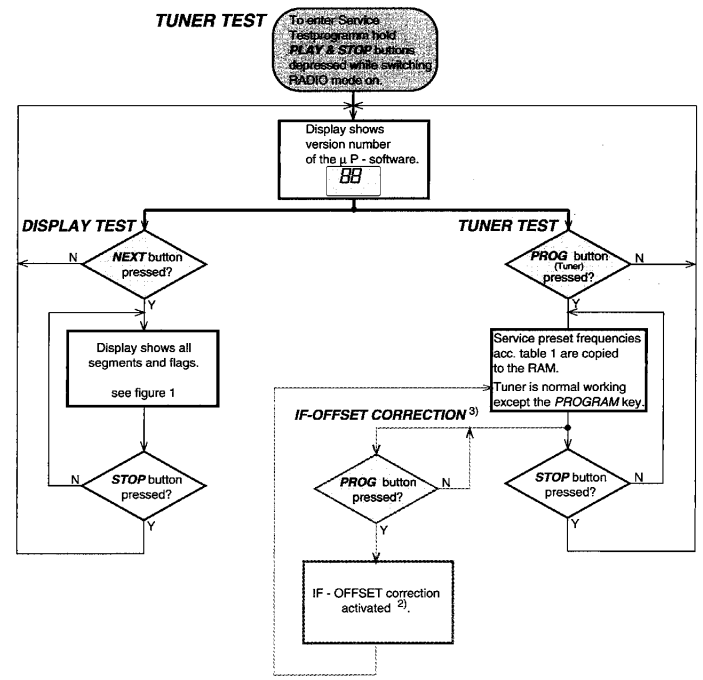


fig. 1



4-2



SERVICE PRESET FREQUENCIES

REGION / PRESET	EUROPE FM/MW/LW /00/05/20/25	EUROPE FM/MW/LW/SW /00/05/20/25	East EUROPE FM/MW/LW /14/34	USA FM/MW /17/37	OVERSEAS FM/MW 1)Grid switchable 10-100kHz/9-50kHz /01/21	OVERSEAS FM/MW/SW 1)Grid switchable 10-100kHz/9-50kHz /01/21	KOREA FM/MW-stereo /13/33	CHINA FM/MW/SW /15/35
1	87,5 MHz	87,5 MHz	65,81 MHz	87,5 MHz	87,5 MHz	87,5 MHz	87,5 MHz	87,5 MHz
2	108 MHz	108 MHz	108 MHz	108 MHz	108 MHz	108 MHz	108 MHz	108 MHz
3	531 kHz	531 kHz	74 MHz	530 kHz	530/531 kHz	530/531 kHz	531 kHz	531 kHz
4	1602 kHz	1602 kHz	87,5 MHz	1700 kHz	1700/1602 kHz	1700/1602 kHz	1602 kHz	1602 kHz
5	558 kHz	558 kHz	531 kHz	560 kHz	560/558 kHz	560/558 kHz	558 kHz	558 kHz
6	1494 kHz	1494 kHz	1602 kHz	1500 kHz	1500/1494 kHz	1500/1494 kHz	1494 kHz	1494 kHz
7	153 kHz	153 kHz	558 kHz			3,9 MHz		5,9 MHz
8	279 kHz	279 kHz	1494 kHz			12,1 MHz		17,9 MHz
9	198 kHz	198 kHz	153 kHz			4,2 MHz		6,2 MHz
10		5,9 MHz	279 kHz			11 MHz		17MHz
11		17,9 MHz	198 kHz					
12		6,2 MHz						
13		17MHz						

table 1

1) **How to set frequency grid:**

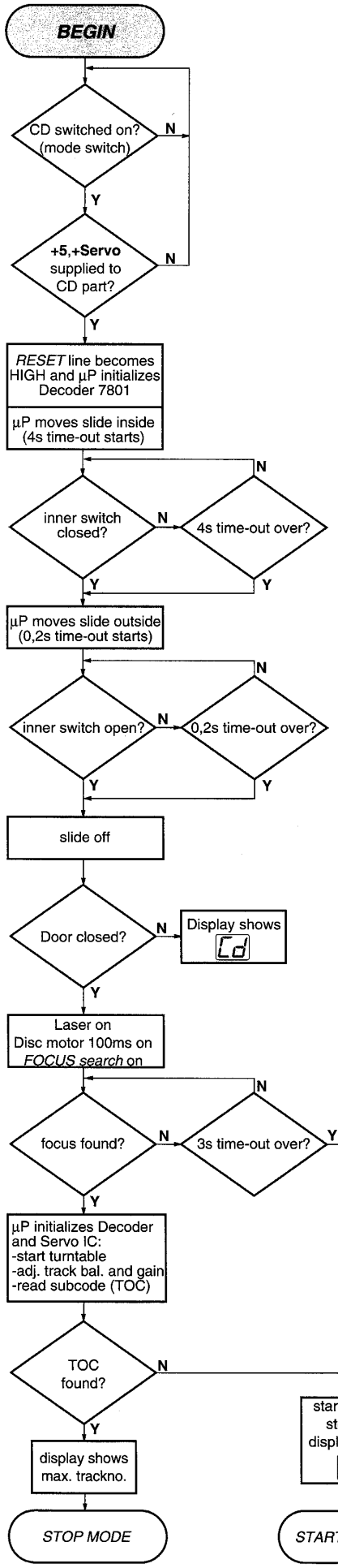
AM - 9 kHz / FM - 50 kHz : Hold ***BAND & TUNING DOWN*** buttons depressed while switching MODE-switch to RADIO.

AM - 10 kHz / FM - 100 kHz : Hold ***BAND & TUNING UP*** buttons depressed while switching MODE-switch to RADIO.

Selected frequency grid is stored in the EEPROM.

2) In sets with 30kHz grid on FM band it may occur that the tuned frequency is indicated wrong on the display because of tolerances of the discriminator filter.
For that reason the testsoftware is prepared for an *automatic IF-offset correction.*
Note: This test functions only with the East European tuner version used in /14/34 set versions.
The test was executed on every set in the production line.
In case the discriminator filter or the EEPROM has to be exchanged the *automatic IF-offset correction* should also be executed after repair.
To execute the *automatic IF-offset correction proceed as follows:*
* feed a strong 87.5MHz signal to the antenna
* press the PROGRAM button
The µP starts now several times the *search* mode.
If the transmitter was found at 87.5MHz the stop-frequency sent by the radio IC is compared with the nominal frequency else the display shows "00E".
When the same difference is found twice the value will be stored as offset.
The actual used offset is shown on the display (-3, -2, -1, 0, 1, 2, 3).

CD STARTUP PROCEDURE



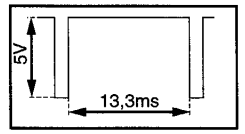
Remark: To check focus servo, slide servo, track servo and turntable use service test program

- Battery empty?
- check **+5** and **+Servo**

check: - door switch

check: - Laser light on ? - Check pin 38 of 7803 and *LASER CONTROL* circuit
- Focus Servo

check: - Motor control pin 37/38 of Decoder 7801 and Disc Motor driver 7805
- HF Signal
- Signal on pin7 of Decoder 7801



Startup CD97, 970310

Abbreviations and Pin-description of CD ICs

SERVO PROCESSOR M62475FP

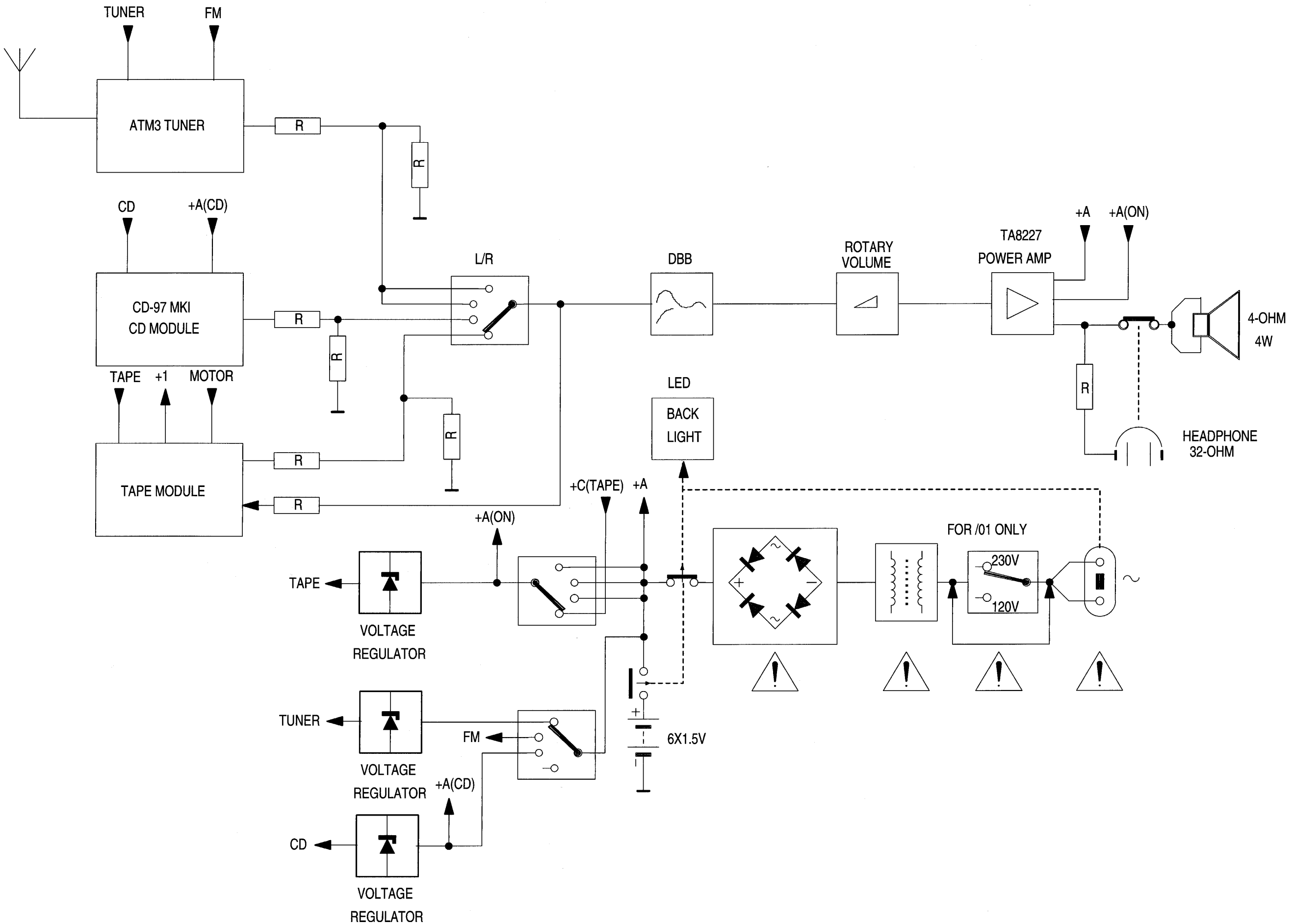
Pin	*Name*	*Direction*	*Description*
1-3	A, B, C	Diode array → Servo processor	Current input (central photo diode signal input
4-5	E, F	Diode array → Servo processor	Current input (satellite photo diode signal input
6	SGT	Servo processor → Track error ampl. Input	Signal generator output to track servo, sends 1700Hz for adjustment procedure
7	TE -	-	Inverting input of track error amplifier
8	TEGain	-	Gain control pin of track error amplifier
9	TG1	-	Track Gain 1 - switch: controls the gain of the track servo amplifier
10	TE out	-	Track Error amplifier output
11	TC/Shock	-	Track Cross/Shock detector input
12	TS +	-	Non inverting input of track servo amplifier
13	TG2	not connected	Track Gain 2 - switch: controls the gain of the track servo amplifier
14	TS -	-	Inverting input of side servo amplifier
15	TS out	Servo processor → Servo driver	Output of track servo amplifier
16	SS +	-	Non inverting input of track servo amplifier
17	SS -	-	Inverting input of side servo amplifier
18	Slide out	Servo processor → Motor driver	Output of slide servo amplifier
19	DET. FILTER	-	Pin for connection of DETection FILter capacitor of *ADJUST LOGIC*
20	BIAS	Servo processor → external electronic	Reference Voltage output Vcc/2 of internal BIAS-generator
21	GND	-	Ground connection pin (negative supply)
22	MLA/DIS	µp → Servo processor	Serial interface Microprocessor Latch control/DIScharge control for adjustment
23	JP1/SG	µp → Servo processor	Serial interface Jump control line/Signal Generator input line for adjustment
24	MCK	µp → Servo processor	Serial interface Clock input line
25	MSD	µp → Servo processor	Serial interface Data input line
26	D_{out}	Servo processor → µp	Serial interface Data output line
27	C_{LPF}	-	Pin for connection of Low Pass Filter capacitor of *ADJUST LOGIC*
28	I_{REF}	-	Reference current input
29	V_{CC}	-	Positive supply connection pin (4V - 5.5V)
30	FS_{OUT}	Servo processor → Servo driver	Output of focus servo amplifier
31	FS -	-	Inverting input of focus serco amplifier
32	FEGain	-	Gain control pin of focus error amplifier
33	FE -	-	Inverting input of focus error amplifier
34	SGF	Servo processor → Focus error ampl. Input	Signal generator output to focus servo, sends 1700Hz for adjustment procedure
35	C_{FSR}	-	Charge capacitor for Focus Search triangle-generator
36	ALPC +	-	Non inverting input of Automatic Laser Power amplifier
37	ALPC -	-	Inverting input of Automatic Laser Power Control amplifier
38	$ALPC_{OUT}$	Servo processor → Laser driver	Output of Automatic Laser Power Control amplifier
39	MRC	-	Connection pin for capacitor of Mirror detector
40	HF	Servo processor → Decoder	Output of HF amplifier
41	HFI	-	Inverting input of HF amplifier
42	ABC	-	Sum output of amplified A, B and C input (central photo diode signal input) to external ac-coupling capacitor

SIGNAL PROCESSOR M65821FP

Pin	*Name*	*Direction*	*Description*
1	VDD1	-	+supply for signal processor
2	EMP	not connected	Emphasis flag output
3	SYCLK	not connected	Frame synchronize output
4	LOCK	not connected	Low disc rotation detect output
5	SCAND	not connected	Subcode sync signal detection
6	CRCF	not connected	Subcode Q CRC check flag output
7	SBQS	Signal processor → µP	Interrupt signal to read out subcode Q data
8	MSD	µP ↔ Signal processor	Data line
9	RESET	Reset circuit → Signal processor	System reset
10	MCK	µP → Signal processor	Clock input
11	MLA	µP → Signal processor	Latch clock input
12-14	MODx	µP → Signal processor	Mode setting inputs (0,1,2)
15	VDD2	-	+supply for data slicer and VCO
16	IREF	-	Current reference
17	HFD	Signal processor → µP	HF signal detect
18	LPF	-	PLL loop filter
19	HF	Servo processor → Signal processor	HF signal input
20	TLC	-	Output from slice level control
21	VSS2	-	Ground
22	C846	not connected	8,4672MHz clock output
23	C423	Signal processor → µP	4,2336MHz clock output
24	EST2	not connected	Error monitor output 2
25	EST1	not connected	Error monitor output 1
26	XI	X-Tal → Signal processor	Crystal oscillator input
27	XO	Signal processor → X-Tal	Crystal oscillator output
28	DOTX	not connected	Output of digital interface
29	DO1	Signal processor → DAC	Serial data output to DAC
30	DO2	not connected	Serial data output to Dual DAC
31	CKSEL	not connected	Crystal selector input. H=8MHz, L=16MHz
32	DSCK	Signal processor → DAC	Data shift clock
33	WDCK	Signal processor → DAC	Word clock
34	LRCK1	Signal processor → DAC	Left/Right clock
35-36	not used		Left/Right clock
37	PWM1	Signal processor → Motor driver	Disc motor driving (Pulse Width Modulation) output 1
38	PWM2	Signal processor → Motor driver	Disc motor driving (Pulse Width Modulation) output 2
39-41	not used		
42	VSS1	GND	Digital system ground

5-1

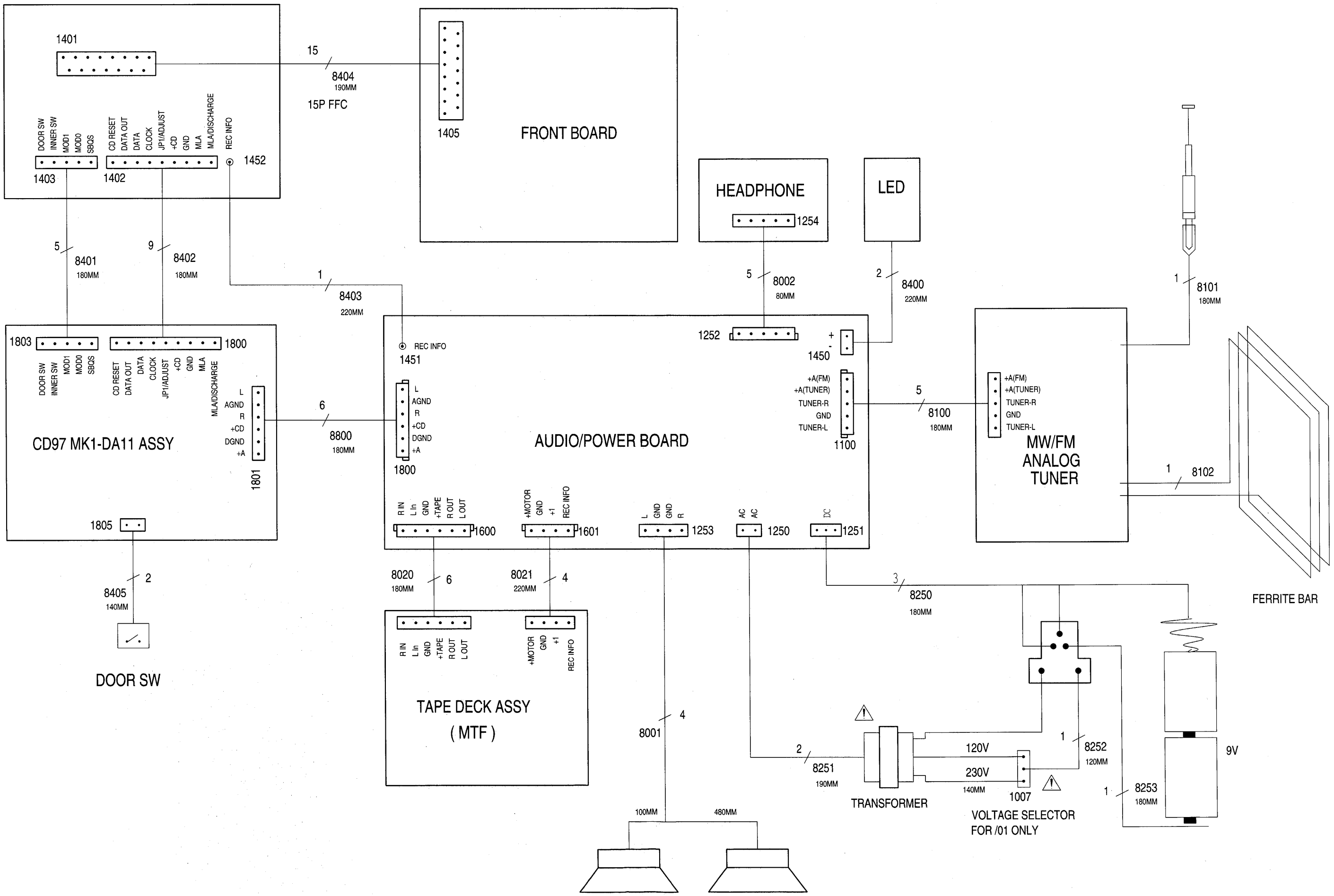
BLOCK DIAGRAM



6-1

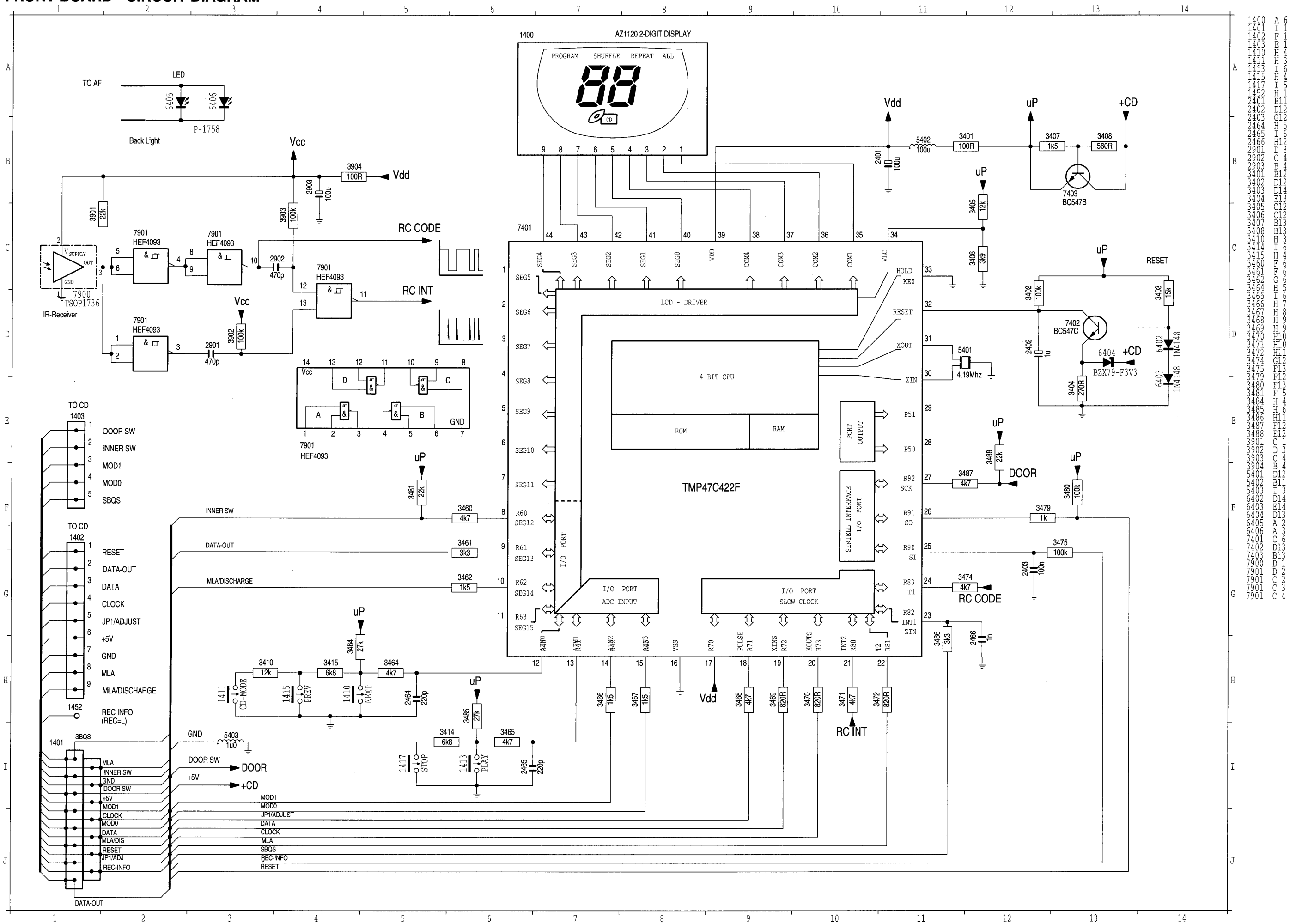
WIRING DIAGRAM

FOR CD97 MK1-DA11 ONLY



7-1

FRONT BOARD - CIRCUIT DIAGRAM

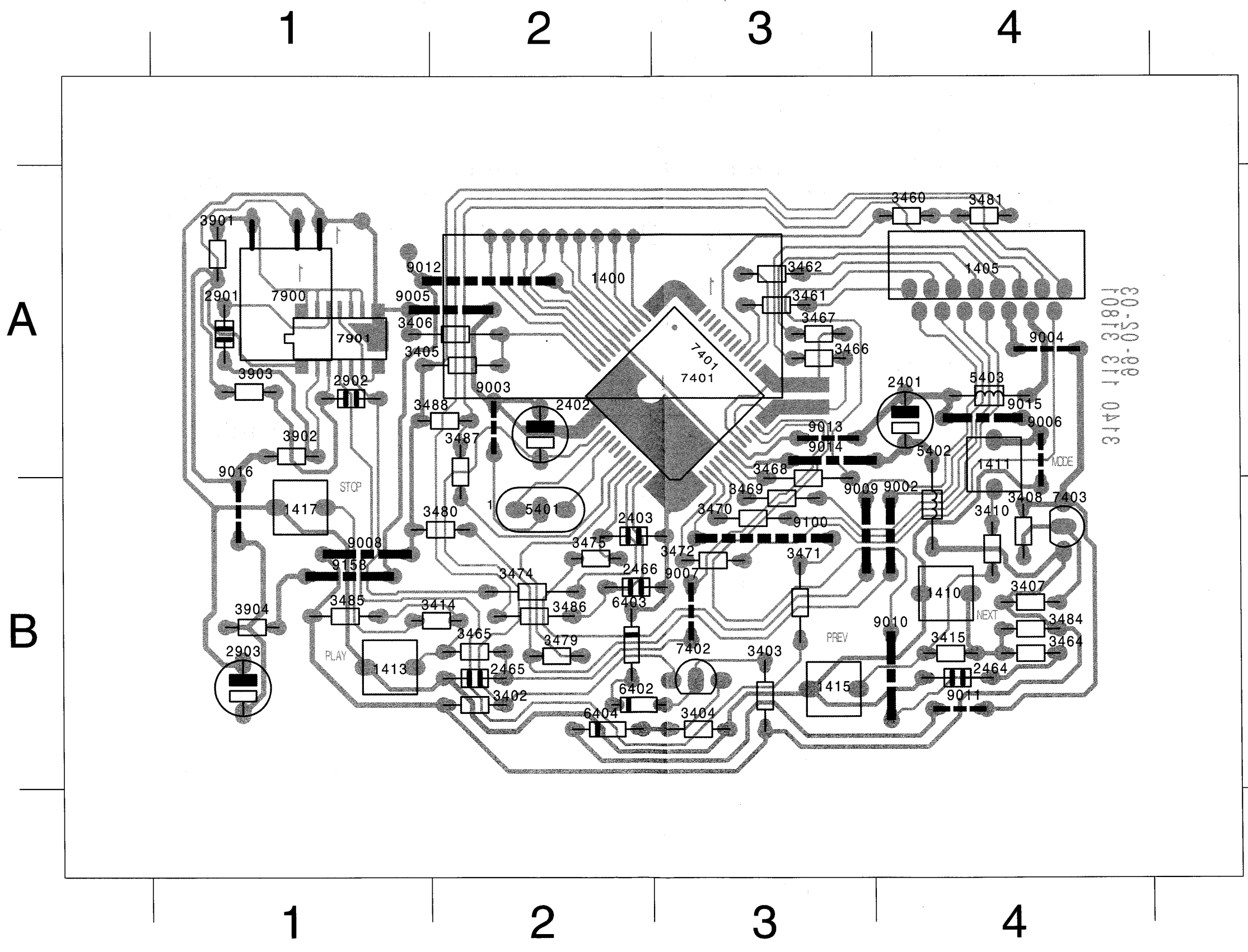


1400 A 6
1401 I 1
1402 F 1
1403 E 1
1410 H 4
1411 H 3
1413 I 6
1415 H 4
1417 I 5
1452 H 1
2401 B11
2402 D12
2403 G12
2464 H 5
2465 I 6
2466 H12
2901 D 3
2902 C 4
2903 B 4
3401 B12
3402 D12
3403 D14
3404 E13
3405 C12
3406 C12
3407 B13
3408 B13
3410 H 3
3414 H 6
3415 H 4
3460 F 6
3461 F 6
3462 G 6
3464 H 5
3465 I 6
3466 H 7
3467 H 8
3468 H 9
3469 H 9
3470 H10
3471 H10
3472 H11
3474 G12
3475 F13
3479 F12
3480 F13
3481 F 5
3484 H 4
3485 H 6
3486 H11
3487 F12
3488 B12
3901 C 1
3902 D 3
3903 C 4
3904 B 4
5401 D12
5402 B11
5403 I 3
6402 D14
6403 D14
6404 D13
6405 A 2
6406 A 3
7401 C 6
7402 D13
7403 B13
7900 D 1
7901 D 2
7901 C 2
7901 C 3
7901 C 4

7-2

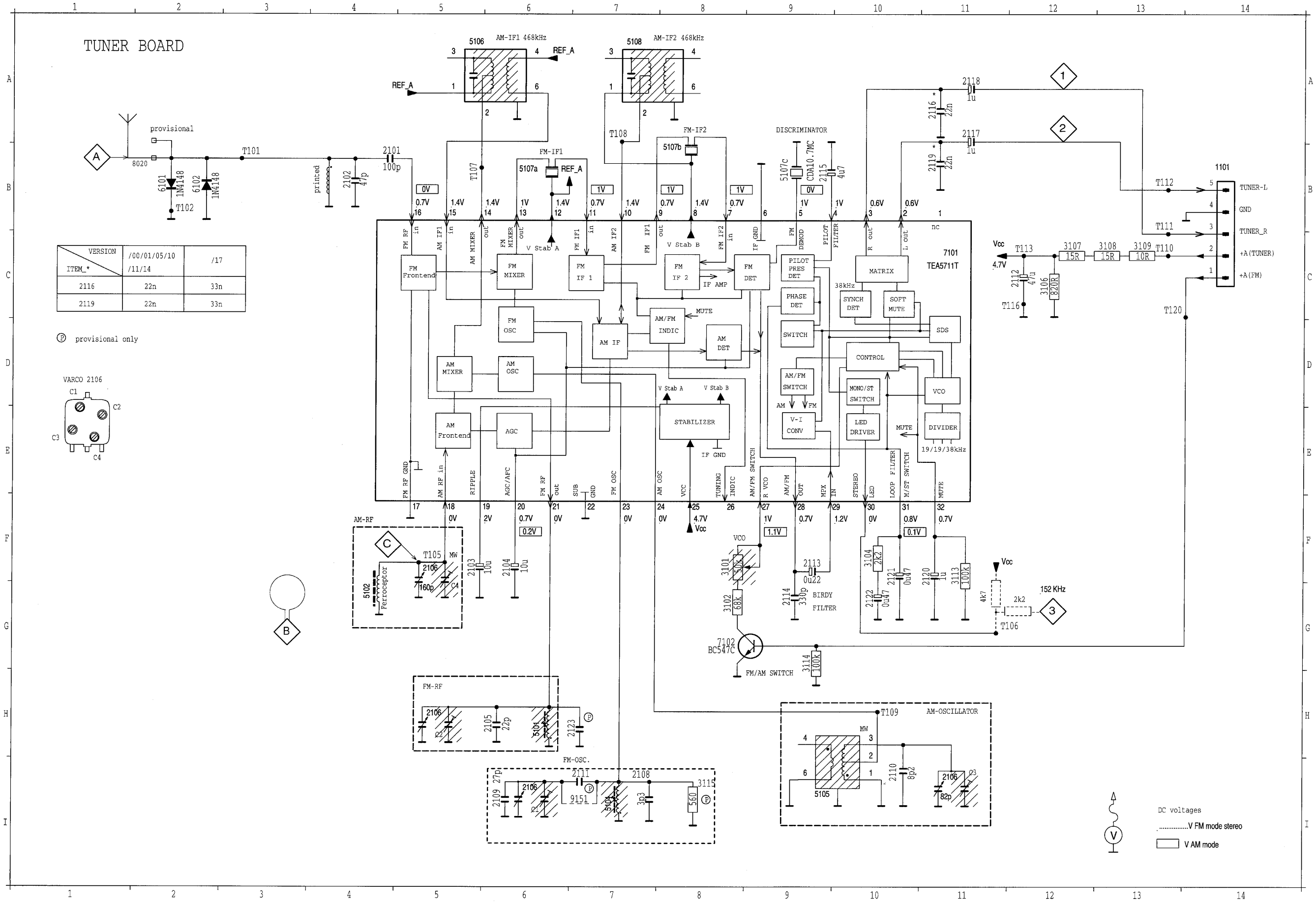
FRONT BOARD - LAYOUT DIAGRAM

1400 A 2	2402 A 2	3402 B 2	3414 B 2	3467 A 3	3479 B 2	3901 A 1	6403 B 2	9003 A 2	9011 B 4
1405 A 4	2403 B 2	3403 B 3	3415 B 4	3468 B 3	3480 B 2	3902 A 1	6404 B 2	9004 A 4	9012 A 2
1410 B 4	2464 B 4	3404 B 3	3460 A 4	3469 B 3	3481 A 4	3903 A 1	7401 A 3	9005 A 2	9013 A 3
1411 A 4	2465 B 2	3405 A 2	3461 A 3	3470 B 3	3484 B 4	3904 B 1	7402 B 3	9006 A 4	9014 A 3
1413 B 1	2466 B 2	3406 A 2	3462 A 3	3471 B 3	3485 B 1	5401 B 2	7403 B 4	9007 B 3	9015 A 4
1415 B 3	2901 A 1	3407 B 4	3464 B 4	3472 B 3	3486 B 2	5402 B 4	7900 A 1	9008 B 1	9016 B 1
1417 B 1	2902 A 1	3408 B 4	3465 B 2	3474 B 2	3487 A 2	5403 A 4	7901 A 1	9009 B 3	9100 B 3
2401 A 4	2903 B 1	3410 B 4	3466 A 3	3475 B 2	3488 A 2	6402 B 2	9002 B 4	9010 B 4	9158 B 1



TUNER BOARD - CIRCUIT DIAGRAM

8-1

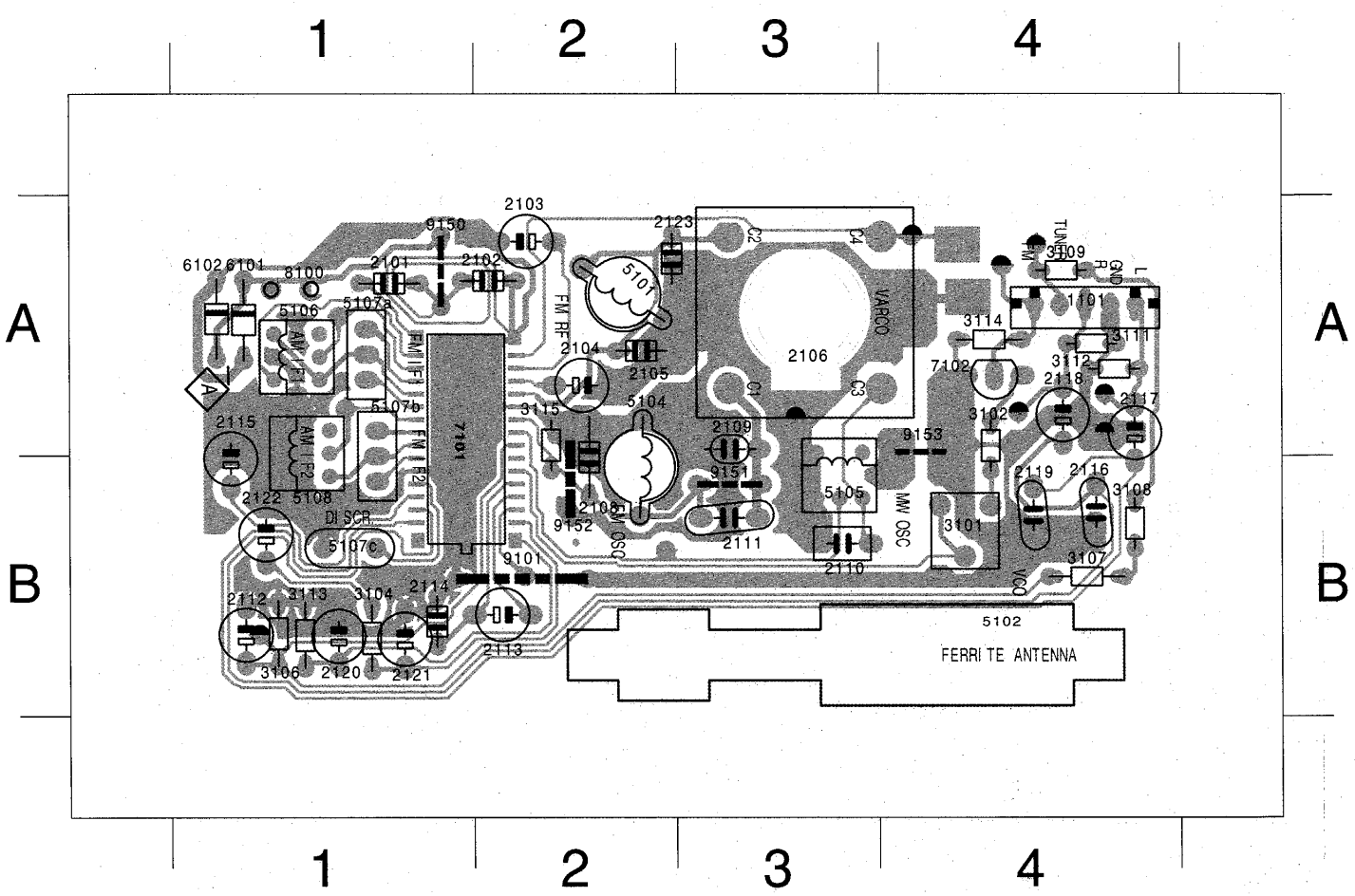


VERSION / ITEM_*	/00/01/05/10 /11/14	/17
2116	22n	33n
2119	22n	33n

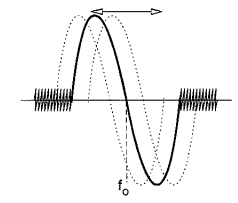
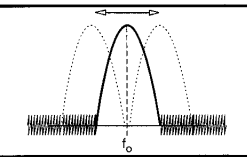
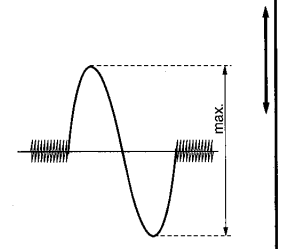
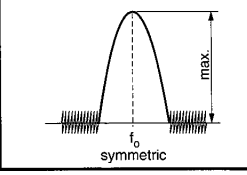
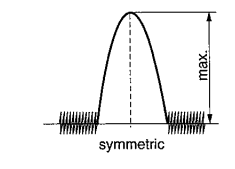
Ⓟ provisional only

TUNER BOARD - LAYOUT DIAGRAM

----	2105 A 2	2112 B 1	2118 A 4	3101 B 4	3109 A 4	5101 A 2	5107c B 1	8100 A 1
1101 A 4	2106 A 3	2113 B 2	2119 B 4	3102 A 4	3111 A 4	5104 B 2	5108 A 1	9101 B 2
2101 A 1	2108 B 2	2114 B 1	2120 B 1	3104 B 1	3112 A 4	5105 B 3	6101 A 1	9150 A 1
2102 A 2	2109 A 3	2115 B 1	2121 B 1	3106 B 1	3113 B 1	5106 A 1	6102 A 1	9151 B 3
2103 A 2	2110 B 3	2116 B 4	2122 B 1	3107 B 4	3114 A 4	5107a A 1	7101 A 1	9152 B 2
2104 A 2	2111 B 3	2117 A 4	2123 A 2	3108 B 4	3115 A 2	5107b B 1	7102 A 4	9153 A 4



TUNER ADJUSTMENT TABLE (ATM3 FM/MW- versions with AM-ferrite antenna)

Waverange	Input Frequency	Input	Set tuned to	Adjust	Measure on	Scope / Counter
OSCILLATOR						
FM **step 1** 87,5 - 108 MHz	87,00 MHz	A ΔF = ±500kHz V_{RF} = 100µV	lower band end	5104 [1] (pre-adjust)	1 or 2	
	108,50 MHz		upper band end	2106 C1		
step 2 65,2 - 75,1 MHz	64,70 MHz		lower band end	5104		
	75,00 MHz		upper band end	check if 75 ±0,8 MHz		
step 3 87,5 - 108 MHz	87,00 MHz		lower band end	5121		
	108,50		upper band end	check if 108,5±0,3 MHz		
MW 525 - 1607 kHz	516 kHz	C ΔF = ±30kHz V_{RF} = 100µV	lower band end	5105	1 or 2	
	1620 kHz		upper band end	2106 C3		
FM - RF						
step 1 87,5 - 108 MHz	87,00 MHz	A ΔF = ±500kHz V_{RF} = 10µV	87,00 MHz	5101 [2] (pre-adjust)	1 or 2	
	108,50 MHz		108,50 MHz	2106 C2		
step 2 64,7 - 75 MHz	70,00 MHz		70,00 MHz	5101		
step 3 87,5 - 108 MHz	87,00 MHz		87,00 MHz	5120		
	108,50 MHz		108,50 MHz	check if max.		
VCO						
FM	98 MHz	A continuous wave V_{RF} = 1 mV	98 MHz	3101	3 (7101 pin 30, 2k2, 4k7, V_{CC})	152 ±1 kHz [3]
AM - IF						
MW	468 kHz connect pin 24 of IC 7101 (AM Osc) with short wire to ground	C ΔF = ±15kHz V_{RF} = 10mV	IC 7101 10, 100nF, 220R / IC 7101 14, 100nF, 220R see remark [4]	5106 / 5108	1 or 2	
AM -RF						
MW	550 kHz	B ΔF = ±30kHz V_{RF} as low as possible	550 kHz	5102 (ferroceptor coil)	1 or 2	
	1500 kHz		1500 kHz	2106 C4		

Tuner Adj. ATM3 FM/FMOIRT/MW ferrite, 110697

repeat

[1] If necessary, pre-adjust 5121 first.

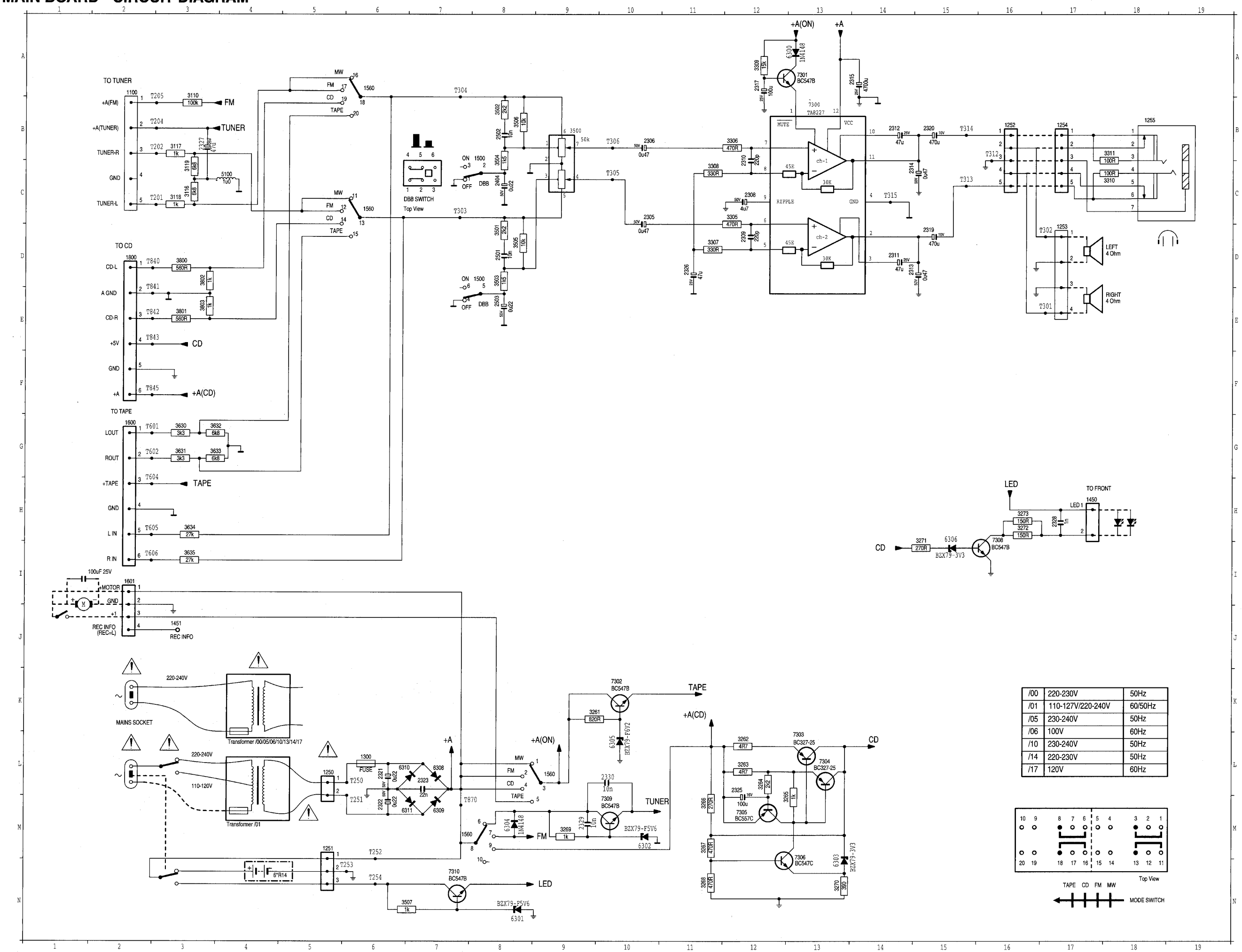
[2] If necessary, pre-adjust 5120 first.

[3] If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)

[4] RC-network serves for damping the IF-filter while adjusting the other one.

MAIN BOARD - CIRCUIT DIAGRAM

9-1

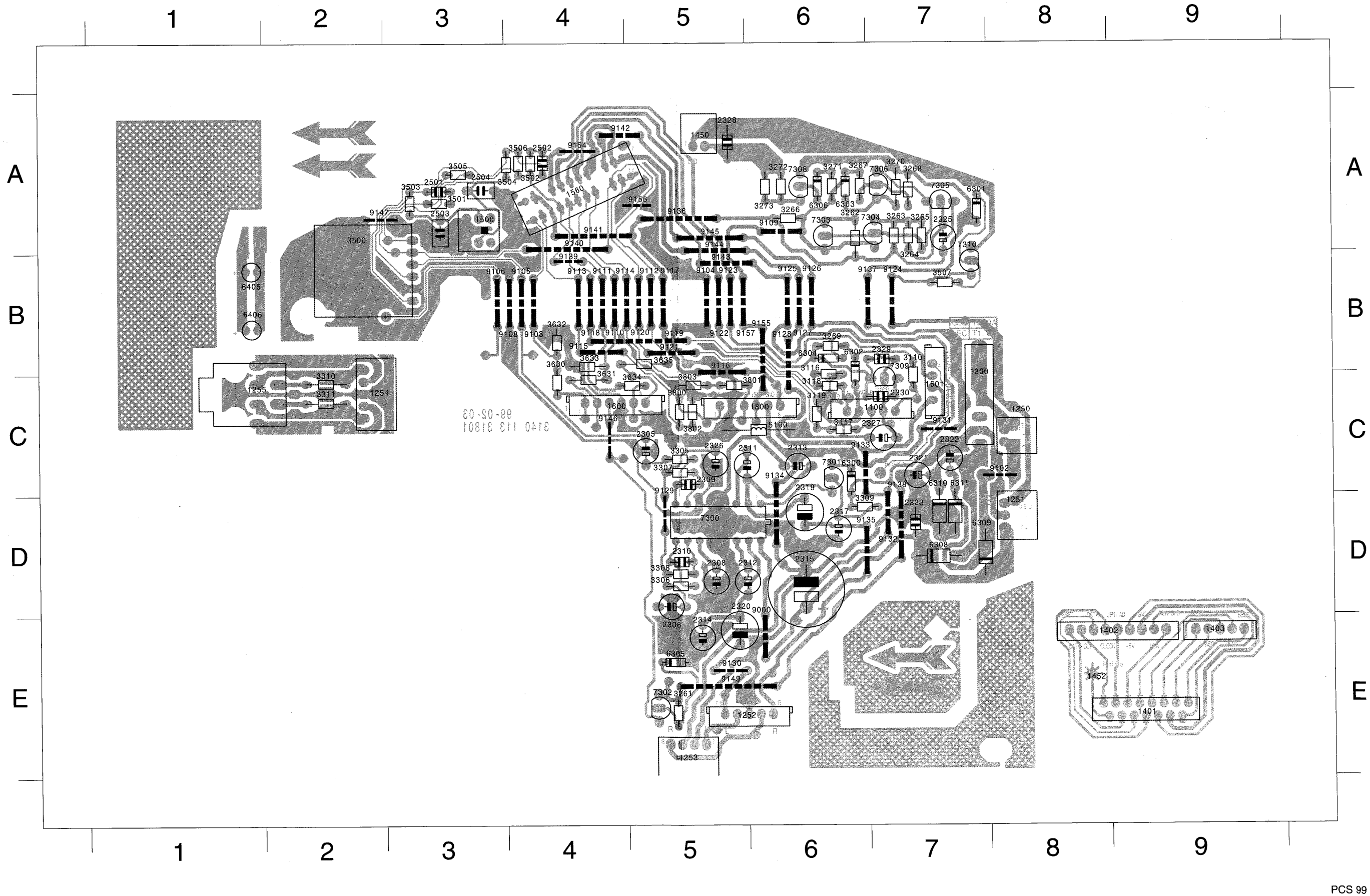


/00	220-230V	50Hz
/01	110-127V/220-240V	60/50Hz
/05	230-240V	50Hz
/06	100V	60Hz
/10	230-240V	50Hz
/14	220-230V	50Hz
/17	120V	60Hz

9-2

MAIN BOARD - LAYOUT DIAGRAM

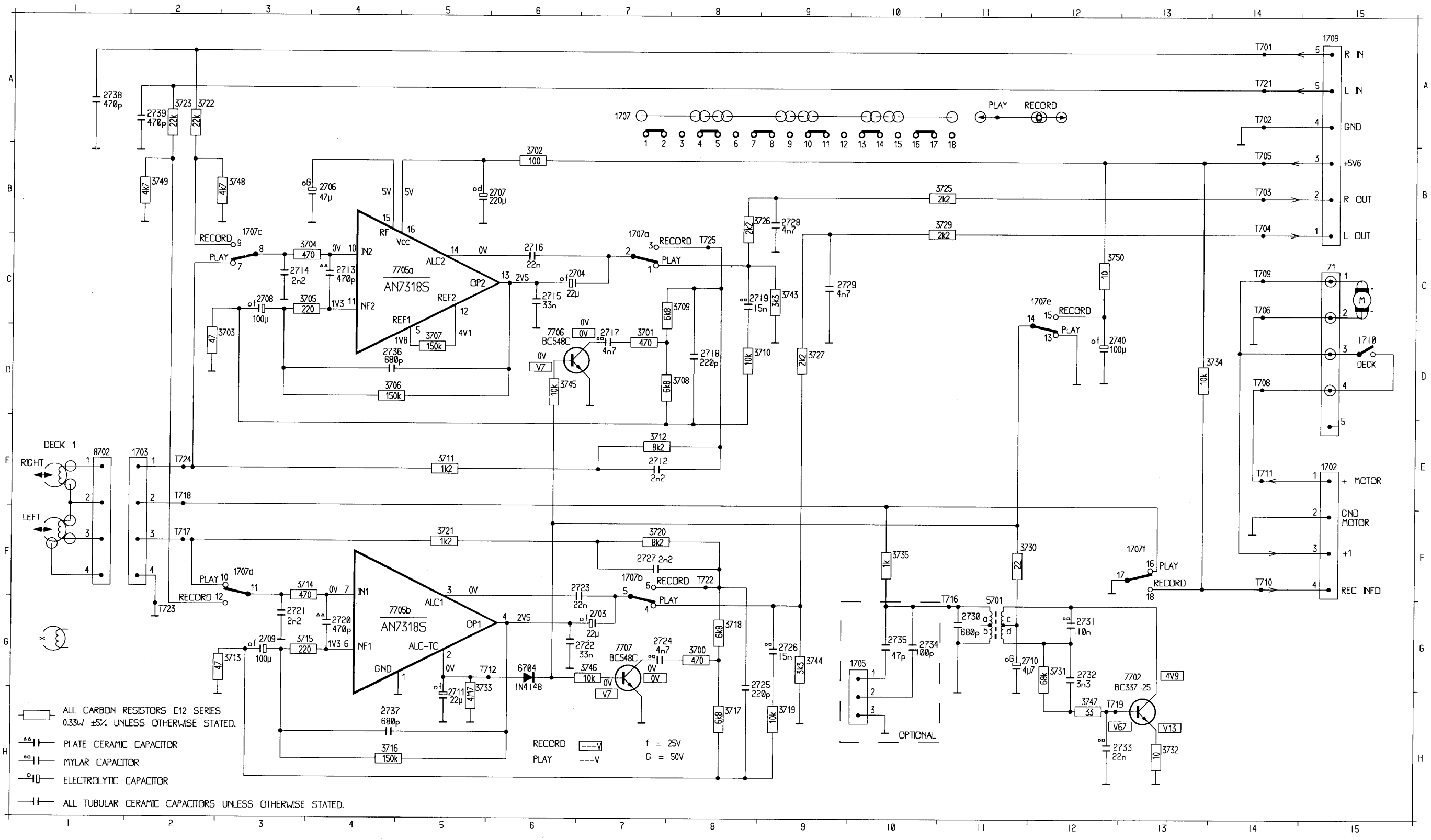
1100 C 7	1401 E 9	1800 C 6	2313 C 6	2323 D 7	2502 A 4	3261 E 5	3269 B 6	3308 D 5	3504 A 4	3634 C 5	6301 A 7	6310 D 7	7304 A 7	9103 B 4	9112 B 5	9120 B 5	9128 B 6	9136 A 5	9144 A 5	9157 B 5
1250 C 8	1402 E 9	2305 C 5	2314 E 5	2325 A 7	2503 A 3	3262 A 6	3270 A 7	3309 D 6	3505 A 3	3635 B 5	6302 B 6	6311 D 7	7305 A 7	9104 B 5	9113 B 4	9121 B 5	9129 D 5	9137 B 7	9145 A 5	
1251 D 8	1403 E 9	2306 D 5	2315 D 6	2326 C 5	2504 A 3	3263 A 7	3271 A 6	3310 C 2	3506 A 4	3800 C 5	6303 A 6	6405 B 1	7306 A 7	9105 B 4	9114 B 5	9122 B 5	9130 E 5	9138 D 7	9146 C 4	
1252 E 5	1450 A 5	2308 D 5	2317 D 6	2327 C 7	3110 C 7	3264 A 7	3272 A 6	3311 C 2	3507 B 7	3801 C 5	6304 B 6	6406 B 1	7308 A 6	9106 B 3	9115 B 4	9123 B 5	9131 C 7	9139 B 4	9147 A 2	
1253 E 5	1500 A 3	2309 C 5	2319 D 6	2328 A 5	3116 C 6	3265 A 7	3273 A 6	3500 B 2	3630 C 4	3802 C 5	6305 E 5	7300 D 5	7309 C 7	9108 B 4	9116 B 5	9124 B 7	9132 D 7	9140 A 4	9149 E 5	
1254 C 2	1560 A 5	2310 D 5	2320 E 5	2329 B 7	3117 C 6	3266 A 6	3305 C 5	3501 A 3	3631 C 4	3803 C 5	6306 A 6	7301 C 6	7310 B 7	9109 A 6	9117 B 5	9125 B 6	9133 C 6	9141 A 4	9154 A 4	
1255 C 1	1600 C 4	2311 C 5	2321 C 7	2330 C 7	3118 C 6	3267 A 6	3306 D 5	3502 A 4	3632 B 4	5100 C 6	6308 D 7	7302 E 5	9000 E 6	9110 B 4	9118 B 4	9126 B 6	9134 D 6	9142 A 4	9155 B 6	
1300 C 7	1601 C 7	2312 D 5	2322 C 7	2501 A 3	3119 C 6	3268 A 7	3307 C 5	3503 A 3	3633 B 4	6300 C 6	6309 D 7	7303 A 6	9102 C 8	9111 B 4	9119 B 5	9127 B 6	9135 D 6	9143 B 5	9156 A 5	



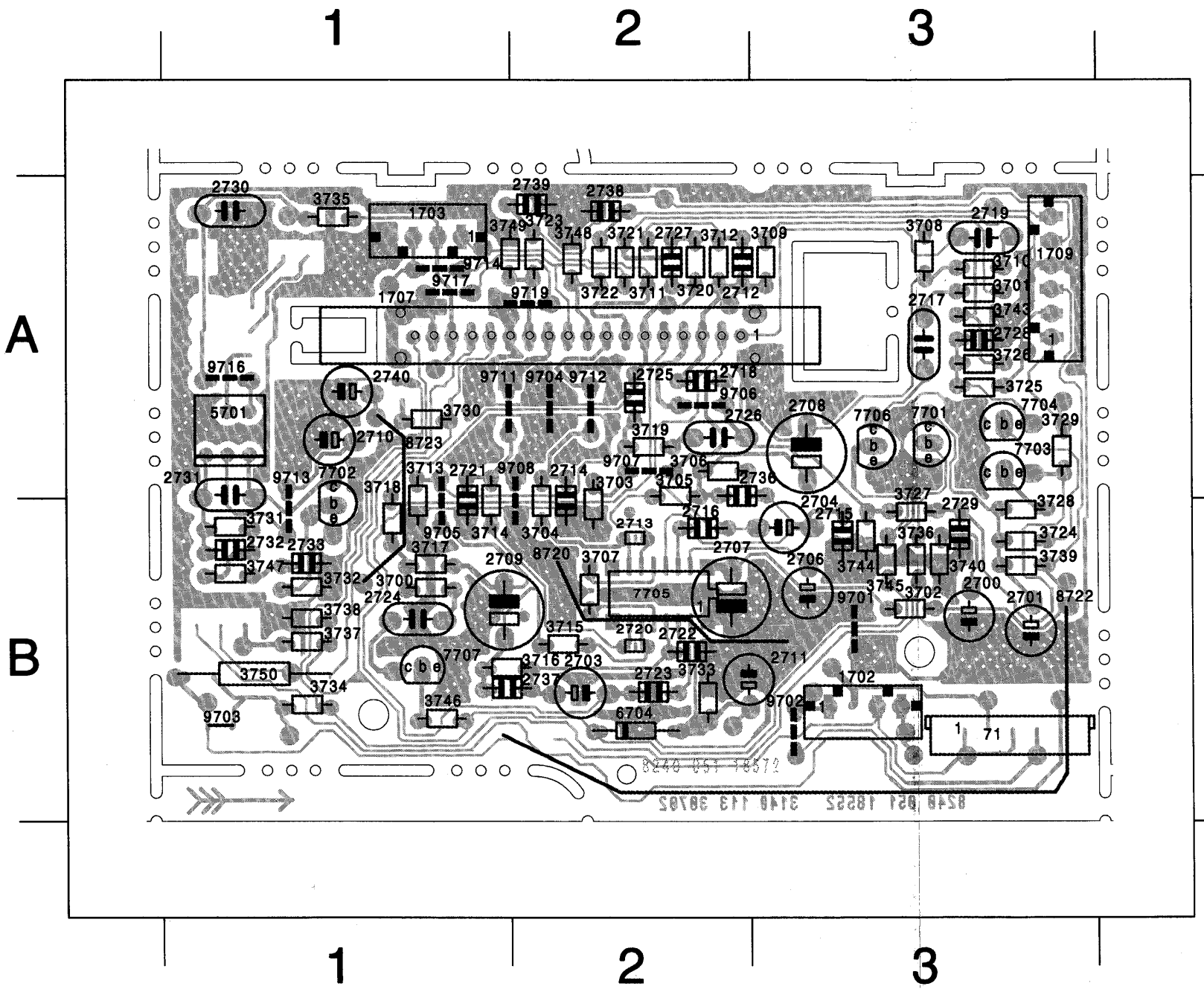
RECORDER BOARD - CIRCUIT DIAGRAM

10-1

71	C15	1707c	B 3	2703	G 7	2710	G12	2716	C 6	2722	G 7	2728	B 9	2734	G10	2740	D12	3705	C 3	3711	E 5	3717	H 8	3723	A 2	3731	G12	3744	G 9	3750	C12	7706	D 6	T704	B14	T711	E14	T721	A14
1702	E15	1707d	F 3	2704	C 6	2711	H 5	2717	D 7	2723	F 7	2729	C 9	2735	G10	3700	G 8	3706	D 4	3712	E 7	3718	G 8	3725	B11	3732	H13	3745	D 6	5701	G11	7707	G 7	T705	B14	T712	G 6	T722	F 8
1703	E 2	1707e	C12	2706	B 4	2712	E 7	2718	D 8	2724	G 7	2730	G11	2736	D 4	3701	D 7	3707	D 5	3713	G 3	3719	H 8	3726	B 9	3733	H 5	3746	G 7	6704	G 6	8702	E 1	T706	C14	T716	G11	T723	G 2
1705	G10	1707f	F13	2707	B 6	2713	C 4	2719	C 8	2725	G 9	2731	G12	2737	H 4	3702	B 6	3708	D 8	3714	F 3	3720	F 7	3727	D 9	3734	D14	3747	H12	7702	G13	T701	A14	T708	D14	T717	F 2	T724	E 2
1707a	B 7	1709	A15	2708	C 3	2714	C 3	2720	G 4	2726	G 9	2732	G12	2738	A 1	3703	D 3	3709	C 8	3715	G 3	3721	F 5	3729	B11	3735	F10	3748	B 3	7705a	C 4	T702	A14	T709	C14	T718	E 2	T725	C 8
1707b	F 7	1710	D15	2709	G 3	2715	C 6	2721	G 3	2727	F 7	2733	H13	2739	A 2	3704	C 3	3710	D 9	3716	H 4	3722	A 2	3730	F11	3743	C 9	3749	B 2	7705b	G 4	T703	B14	T710	F14	T719	H13		



RECORDER BOARD - LAYOUT DIAGRAM



71	B 3	2736	A 2	3732	B 1	9716	A 1
1702	B 3	2737	B 1	3733	B 2	9717	A 1
1703	A 1	2738	A 2	3734	B 1	9719	A 2
1707	A 2	2739	A 2	3735	A 1	8720	B 2
1709	A 3	2740	A 1	3736	B 3	8722	B 3
2700	B 3	3700	B 1	3737	B 1	8723	A 1
2701	B 3	3701	A 3	3738	B 1	9703	B 1
2703	B 2	3702	B 3	3739	B 3		
2704	B 3	3703	B 2	3740	B 3		
2706	B 3	3704	B 2	3743	A 3		
2707	B 2	3705	A 2	3744	B 3		
2708	A 3	3706	A 2	3745	B 3		
2709	B 1	3707	B 2	3746	B 1		
2710	A 1	3708	A 3	3747	B 1		
2711	B 2	3709	A 3	3748	A 2		
2712	A 2	3710	A 3	3749	A 2		
2713	B 2	3711	A 2	3750	B 1		
2714	B 2	3712	A 2	5701	A 1		
2715	B 3	3713	B 1	6704	B 2		
2716	B 2	3714	B 1	7701	A 3		
2717	A 3	3715	B 2	7702	B 1		
2718	A 2	3716	B 1	7703	A 3		
2719	A 3	3717	B 1	7704	A 3		
2720	B 2	3718	B 1	7705	B 2		
2721	B 1	3719	A 2	7706	A 3		
2722	B 2	3720	A 2	7707	B 1		
2723	B 2	3721	A 2	9701	B 3		
2724	B 1	3722	A 2	9702	B 3		
2725	A 2	3723	A 2	9704	A 2		
2726	A 2	3724	B 3	9705	B 1		
2727	A 2	3725	A 3	9706	A 2		
2728	A 3	3726	A 3	9707	A 2		
2729	B 3	3727	B 3	9708	B 2		
2730	A 1	3728	B 3	9711	A 1		
2731	A 1	3729	A 3	9712	A 2		
2732	B 1	3730	A 1	9713	B 1		
2733	B 1	3731	B 1	9714	A 1		

CASSETTE ADJUSTMENT

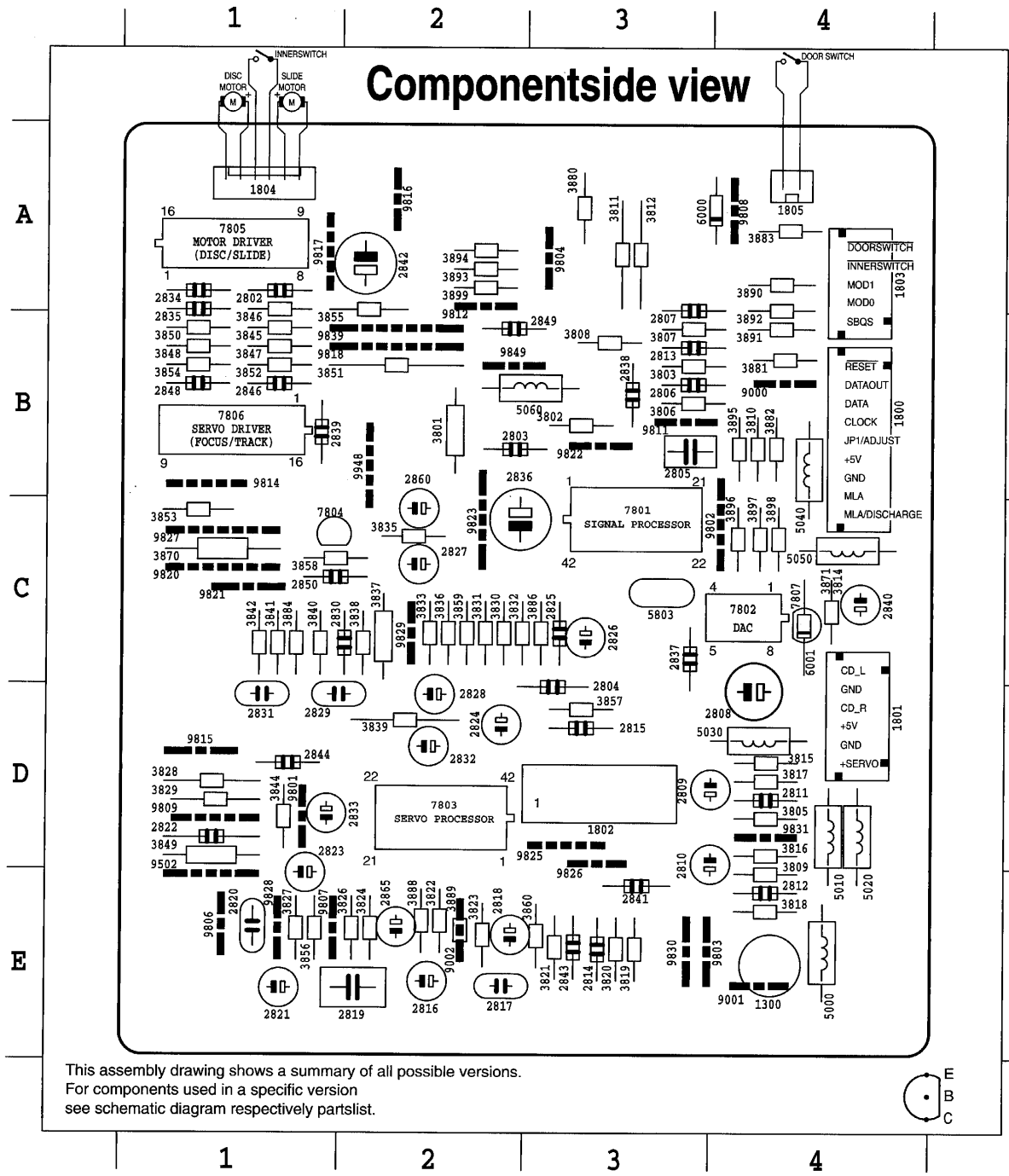
Adjustment	Cassette	SK	Deck 1	Measure on	Read on	Adjust with	Adjust to
Azimuth	10kHz SBC420*	TAPE	Play	H/P Jack	mV meter	Left hand Screw R/P Head	max.
Motor Speed	3150kHz SBC420*	TAPE	Play	H/P Jack	Wow and flutter meter	Preset in motor	**a

* SBC420 : 4822 397 30071

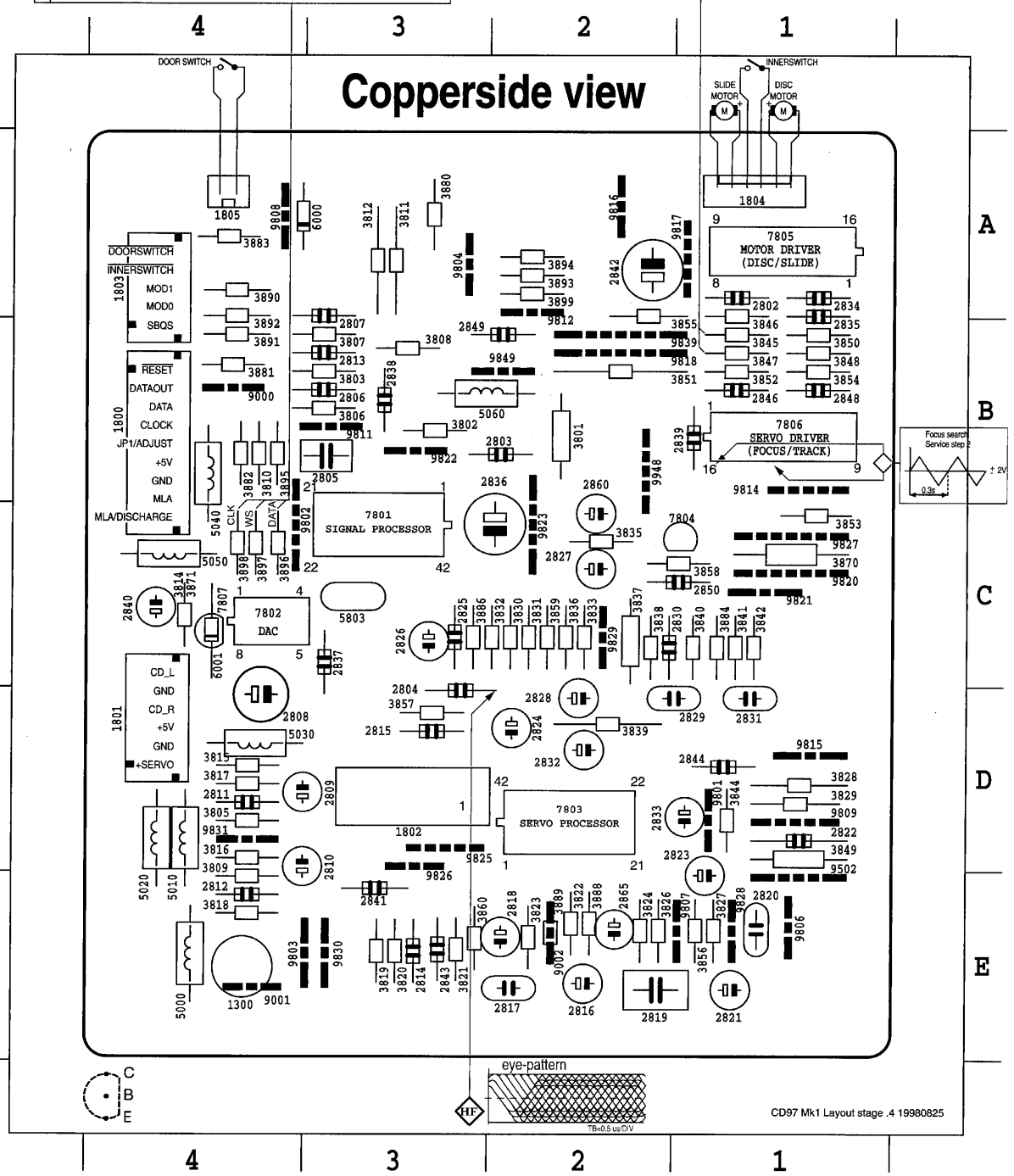
**a The maximum permissible speed deviation is ± 3%.
Morever, the wow and flutter value can be read.

CD97 (DA11 MK I) - LAYOUT DIAGRAM

11-1



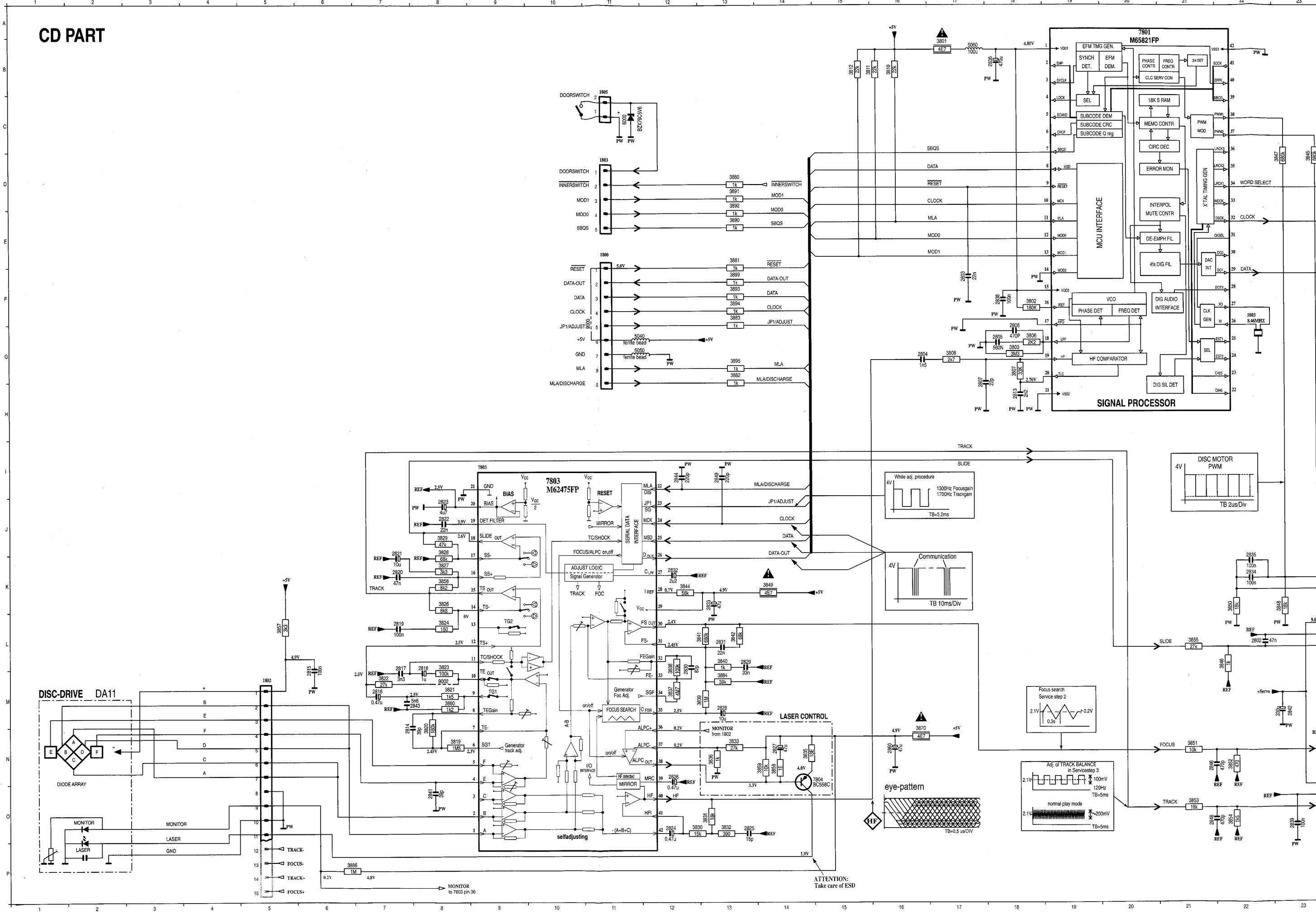
1300 E 4	3807 B 3	3891 B 4
1800 B 4	3808 B 3	3892 A 4
1801 D 4	3809 E 4	3893 A 2
1802 D 3	3810 B 4	3894 A 2
1803 A 4	3811 A 3	3895 B 4
1804 A 1	3812 A 3	3896 C 4
1805 A 4	3814 C 4	3897 C 4
2802 A 1	3815 D 4	3898 C 4
2803 B 2	3816 D 4	3899 A 2
2804 D 3	3817 D 4	5000 E 4
2805 B 3	3818 E 4	5010 D 4
2806 B 3	3819 E 3	5020 D 4
2807 A 3	3820 E 3	5030 D 4
2808 D 4	3821 E 3	5040 B 4
2809 D 4	3822 E 2	5050 C 4
2810 D 4	3823 E 2	5060 B 3
2811 D 4	3824 E 2	5803 C 3
2812 E 4	3826 E 2	6000 A 4
2813 B 3	3827 E 1	6001 C 4
2814 E 3	3828 D 1	7802 C 4
2815 D 3	3829 D 1	7804 C 1
2816 E 2	3830 C 2	7805 A 1
2817 E 2	3831 C 2	7806 B 1
2818 E 2	3832 C 2	7807 C 4
2819 E 2	3833 C 2	9000 B 4
2820 E 1	3835 C 2	9001 E 4
2821 E 1	3836 C 2	9002 E 2
2822 D 1	3837 C 2	9502 E 1
2823 E 1	3838 C 2	9801 D 1
2824 D 2	3839 D 2	9802 C 4
2825 C 3	3840 C 1	9803 E 3
2826 C 3	3841 C 1	9804 A 3
2827 C 2	3842 C 1	9806 E 1
2828 D 2	3844 D 1	9807 E 1
2829 D 1	3845 B 1	9808 A 4
2830 C 2	3846 A 1	9809 D 1
2831 D 1	3847 B 1	9811 B 3
2832 D 2	3848 B 1	9812 A 2
2833 D 1	3849 D 1	9814 B 1
2834 A 1	3850 B 1	9815 D 1
2835 A 1	3851 B 2	9816 A 2
2836 C 2	3852 B 1	9817 A 1
2837 C 3	3853 C 1	9818 B 2
2838 B 3	3854 B 1	9820 C 1
2839 B 1	3855 A 2	9821 C 1
2840 C 4	3856 E 1	9822 B 3
2841 E 3	3857 D 3	9823 C 2
2842 A 2	3858 C 1	9825 D 3
2843 E 3	3859 C 2	9826 D 3
2844 D 1	3860 E 3	9827 C 1
2846 B 1	3870 C 1	9828 E 1
2848 B 1	3871 C 4	9829 C 2
2849 B 2	3880 A 3	9830 E 3
2850 C 1	3881 B 4	9831 D 4
2860 C 2	3882 B 4	9839 B 2
2865 E 2	3883 A 4	9849 B 2
3801 B 2	3884 C 1	9948 B 2
3802 B 3	3886 C 3	7801 C 3
3803 B 3	3888 E 2	7803 D 2
3805 D 4	3889 E 2	
3806 B 3	3890 A 4	

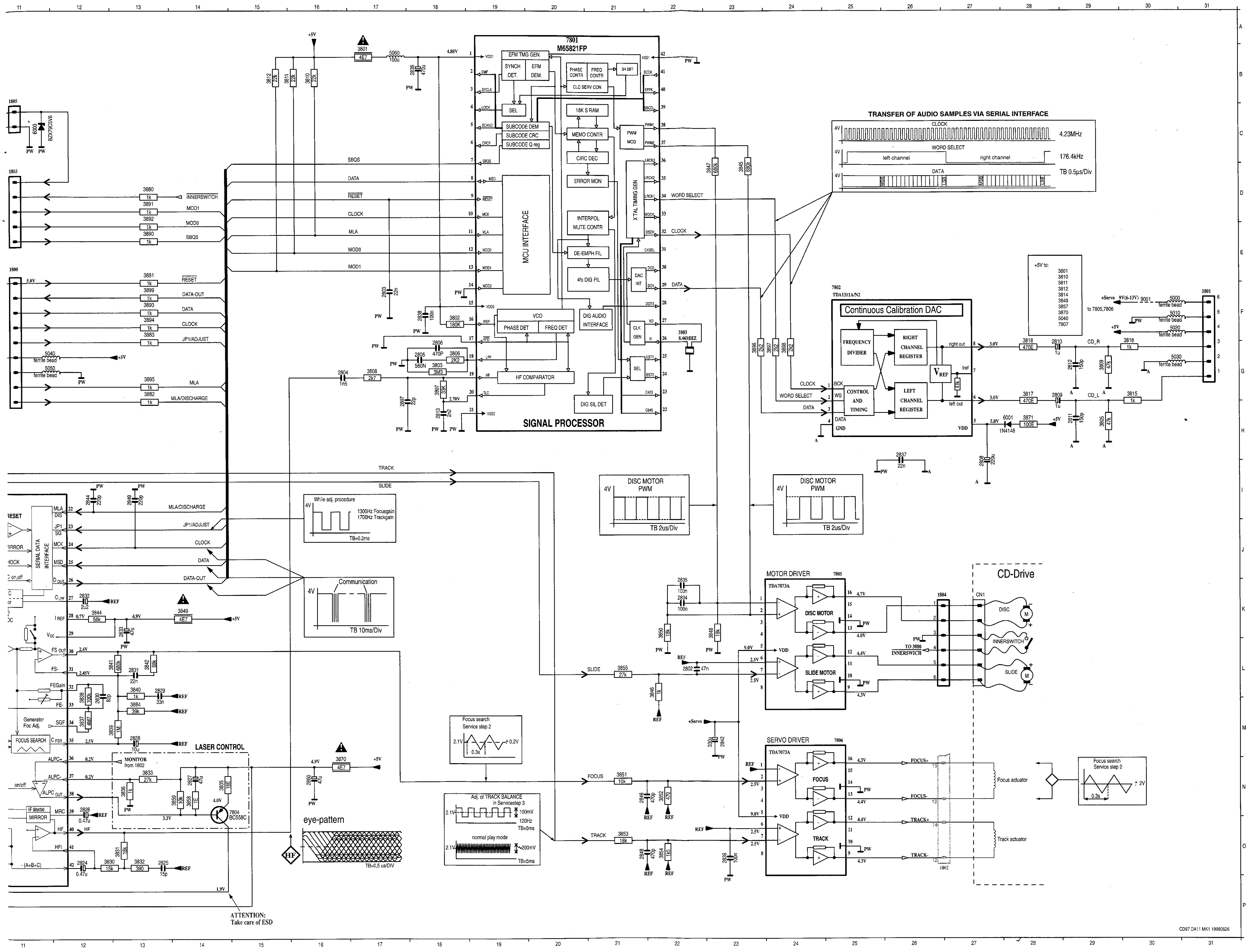


CD97 (DA11 MK I) - CIRCUIT DIAGRAM

11-2

CD PART





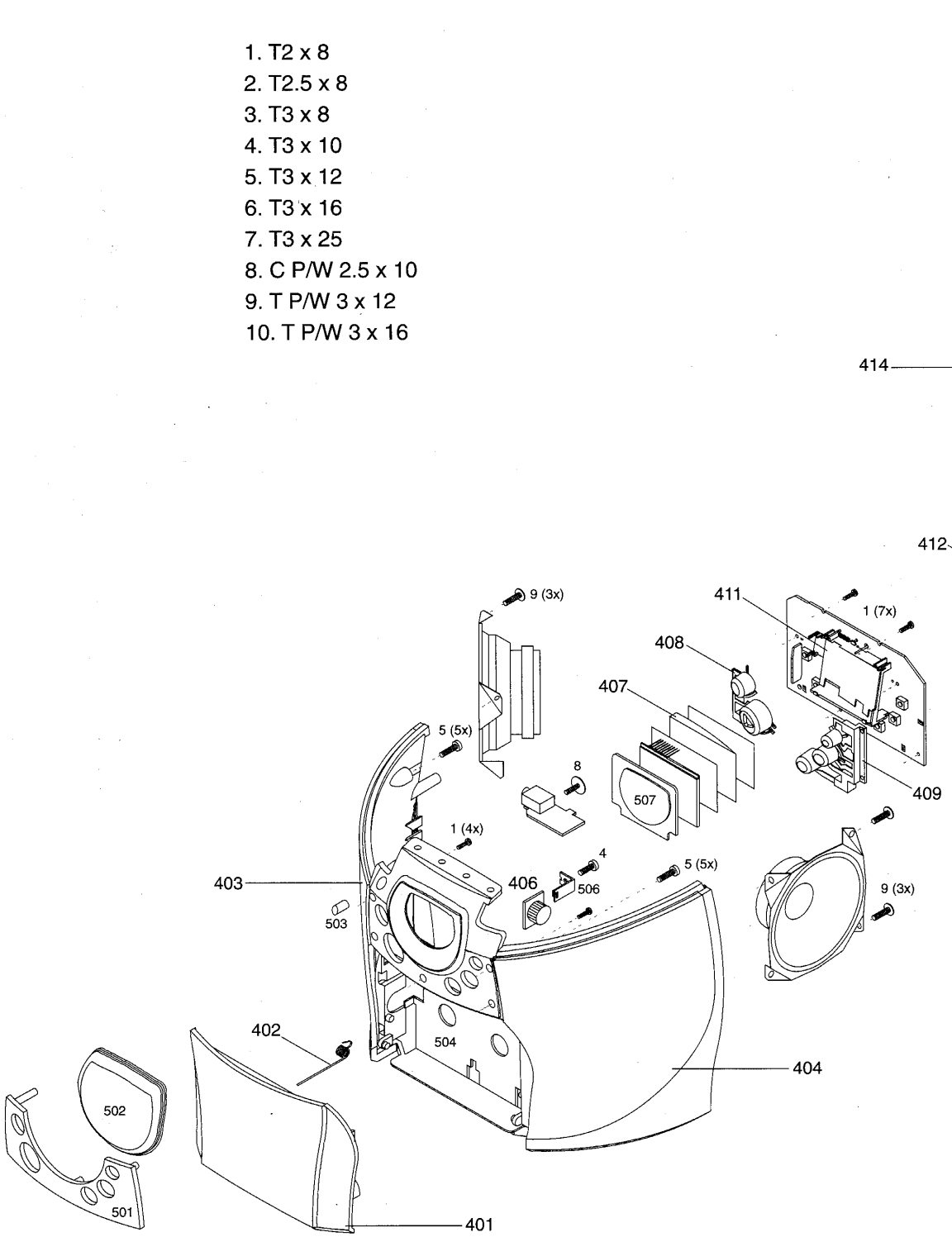
1300	E29
1800	E11
1801	F31
1802	Q 5
1803	D11
1804	K26
1805	D 8
2802	L22
2803	F17
2804	G16
2805	G18
2806	G18
2807	G17
2808	H27
2809	G28
2810	G28
2811	H29
2812	G29
2813	H18
2814	M 7
2815	L 6
2816	M 7
2817	L 7
2818	L 8
2819	L 7
2820	K 7
2821	J 7
2822	J 8
2823	J 8
2824	O12
2825	O13
2826	N12
2827	N14
2828	M13
2829	L13
2830	L12
2831	L13
2832	K12
2833	K13
2834	K22
2835	K22
2836	B18
2837	H26
2838	F18
2839	O23
2841	O 8
2842	M23
2843	M 7
2844	I12
2846	N21
2848	O21
2849	I13
2850	O14
2860	N16
2865	M 7
3801	B17
3802	F18
3803	G18
3805	H29
3806	G18
3807	G18
3808	G17
3809	G29
3810	B16
3811	B16
3812	B15
3815	G30
3816	G30
3817	G28
3818	G28
3819	N 8
3820	M 8
3821	M 8
3822	L 7
3823	L 8
3824	L 8
3826	K 8
3827	K 8
3828	J 8
3829	J 8
3830	O12
3831	O13
3832	O13
3833	N13
3835	N14
3836	N13
3837	M12
3838	L12
3839	M13
3840	L13
3841	L13
3842	L13
3844	K12
3845	D23
3846	L22
3847	D23
3848	K23
3849	K14
3850	M22
3851	N21
3852	N22
3853	O21
3854	O22
3855	L21
3856	K 8
3857	L 5
3858	N14
3859	N14
3860	M 8
3870	N16
3871	H28
3880	D13
3881	E13
3882	G13
3883	F13
3884	M13
3886	P 6
3888	M 8
3889	L 8
3890	E13
3891	D13
3892	D13
3893	F13
3894	F13
3895	G13
3896	G23
3897	G24
3898	G24
3899	F13
5000	F30
5010	F30
5020	F30
5030	G30
5040	G11
5050	G11
5060	A18
5803	F22
6000	E11
6001	H28
7801	A19
7802	F25
7803	I 9
7804	N14
7805	J25
7806	M25
9000	F10
9001	F29
9002	M 8

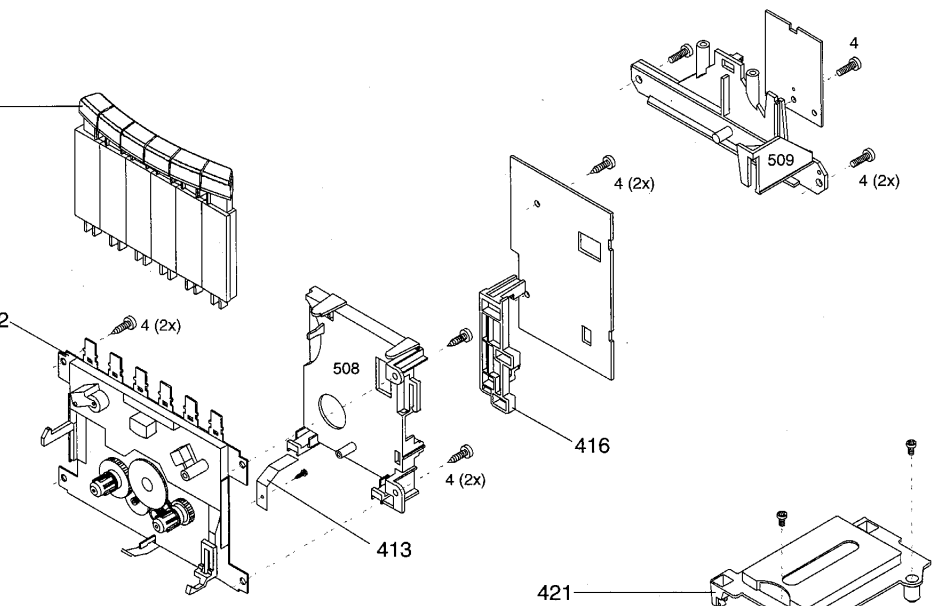
XPLODED VIEW DIAGRAM - CABINET

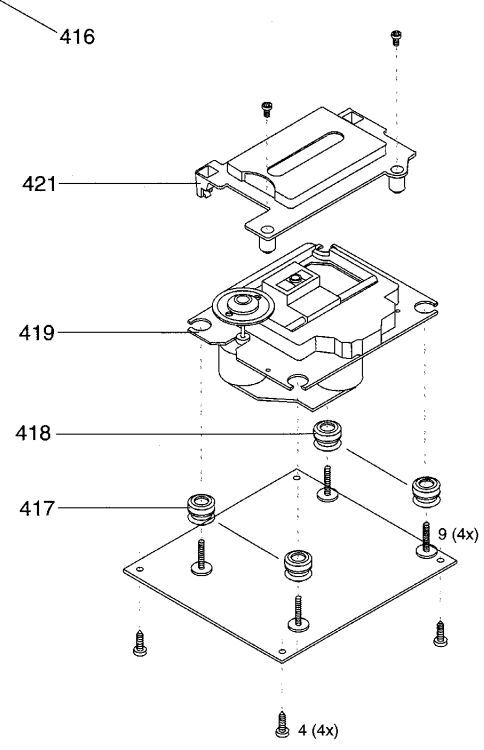
12-1

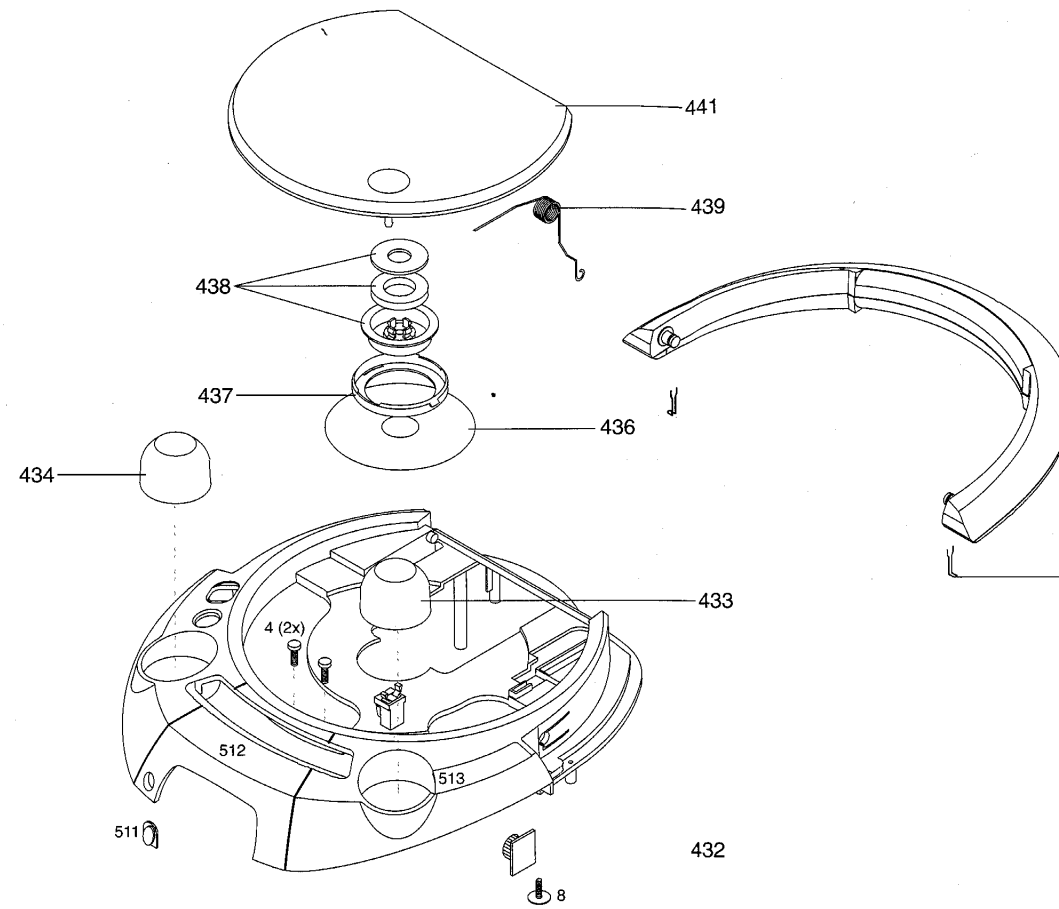
SCREW LIST

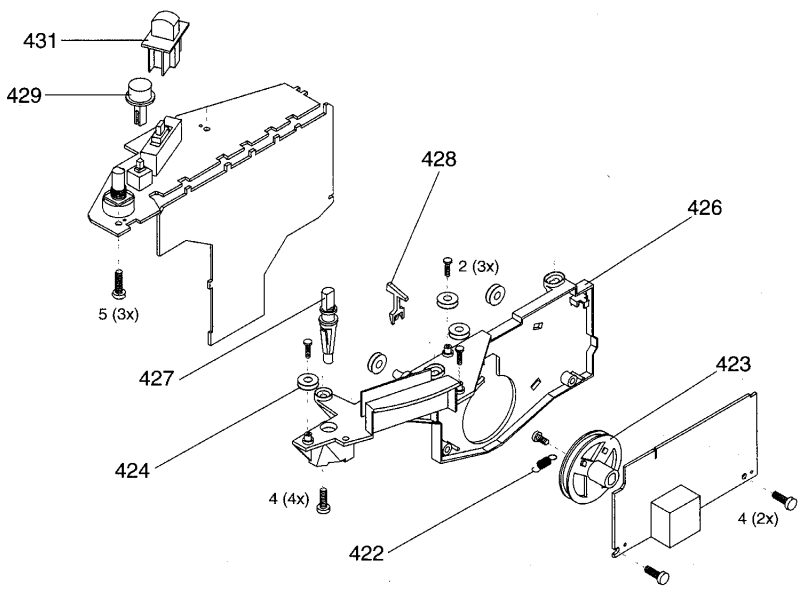
1. T2 x 8
2. T2.5 x 8
3. T3 x 8
4. T3 x 10
5. T3 x 12
6. T3 x 16
7. T3 x 25
8. C P/W 2.5 x 10
9. T P/W 3 x 12
10. T P/W 3 x 16



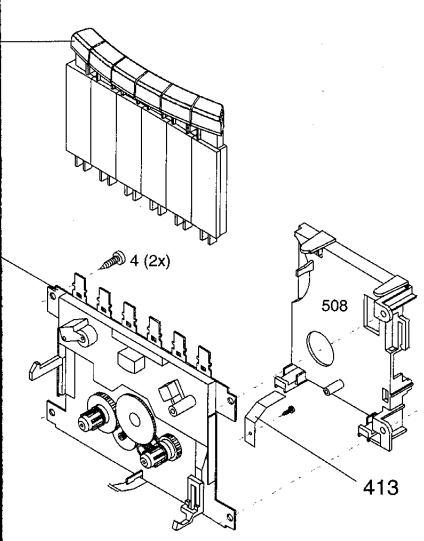






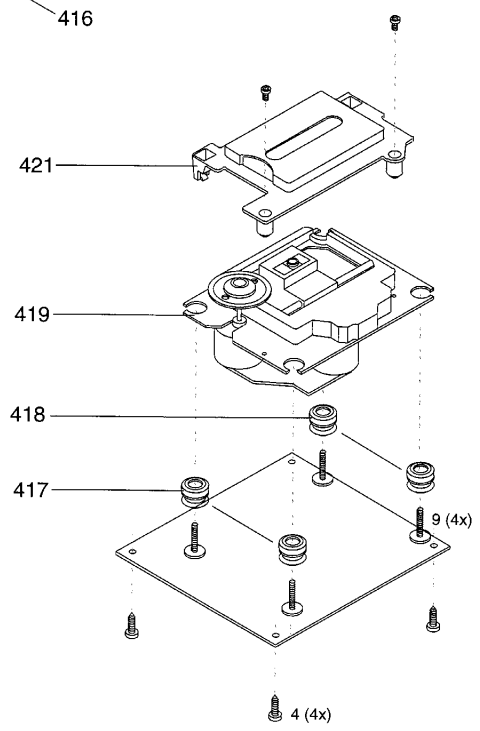


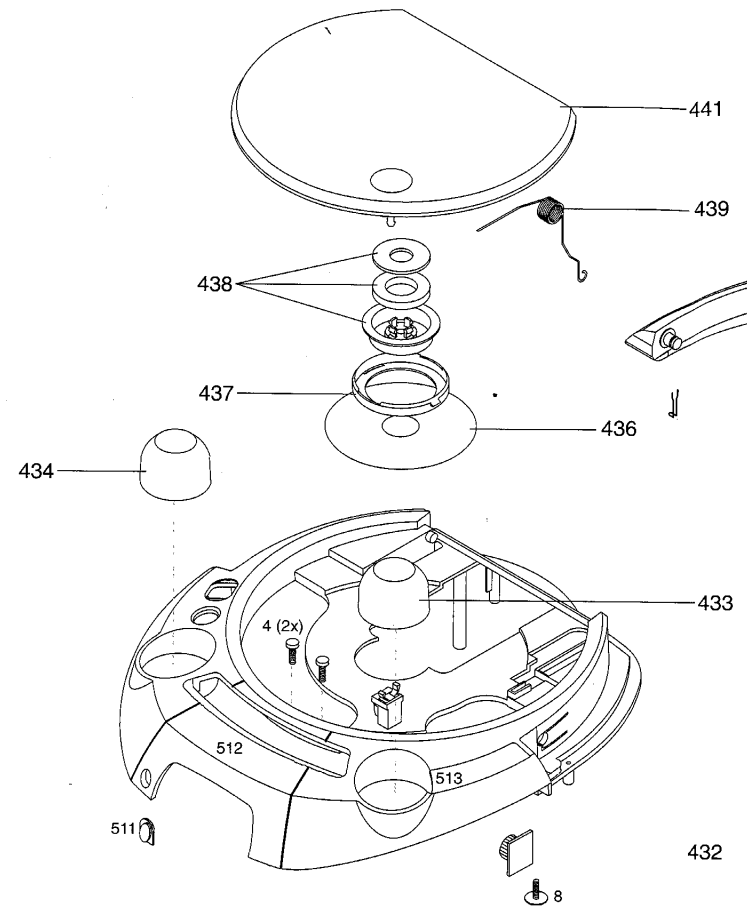
12-1


4 (2x)
508
413

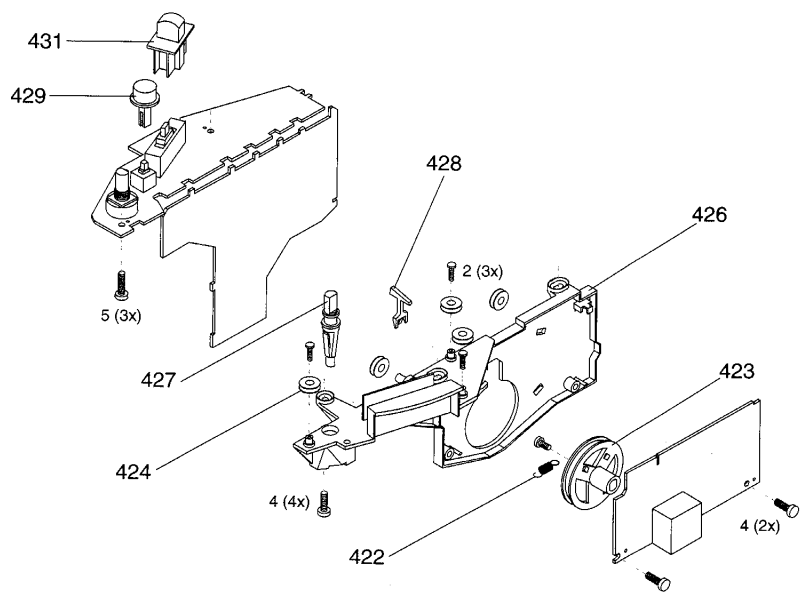
4 (2x)
416

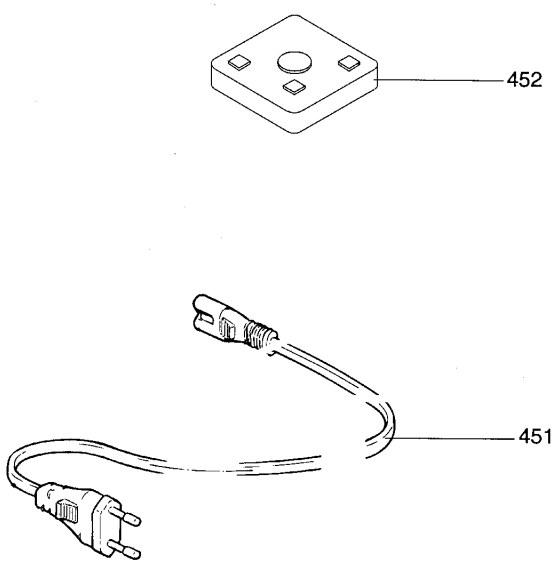
4
509
4 (2x)
4 (2x)

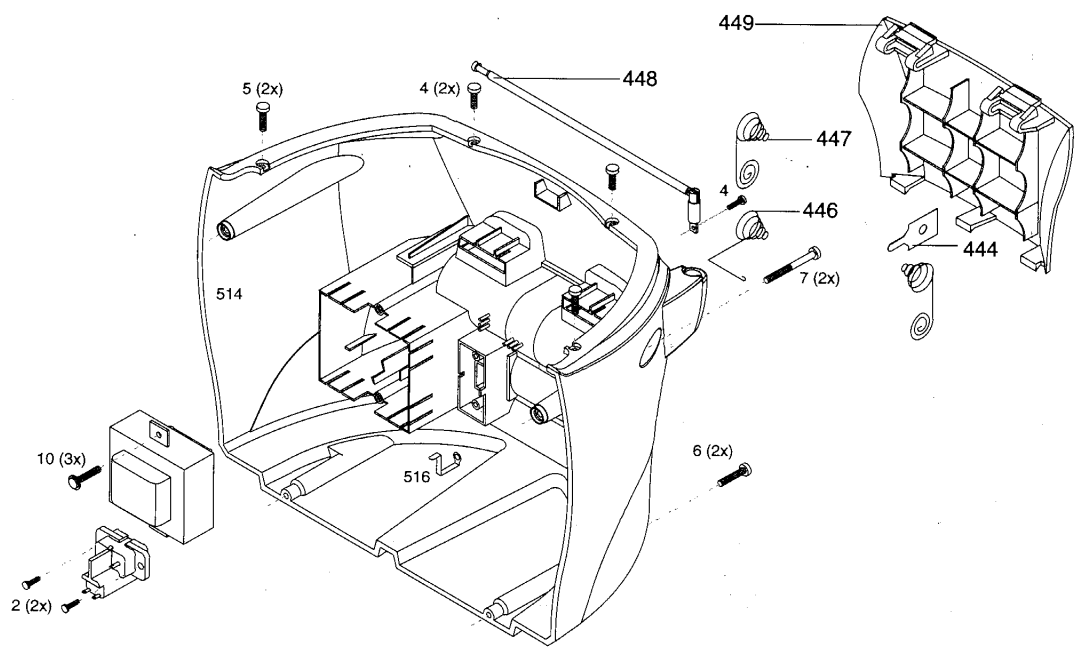

421
419
418
417
9 (4x)
4 (4x)


441
439
438
437
436
434
433
4 (2x)
512
513
511
8
432

443
442


431
429
5 (3x)
428
2 (3x)
426
427
424
4 (4x)
423
422
4 (2x)


452
451


449
448
5 (2x)
4 (2x)
447
4
446
444
7 (2x)
514
516
10 (3x)
6 (2x)
2 (2x)

MECHANICAL PARTSLIST - CABINET

401	4822 443 11258	Door Cassette	438	4822 532 12798	Ring Pressure
402	4822 492 11776	Spring Cass Door	439	4822 492 11777	Spring CD
403	4822 458 10689	Speaker Cloth Assy (L)	441	4822 443 11259	Door CD
404	4822 458 10688	Speaker Cloth Assy (R)	442	4822 492 11778	Spring Handle
406	4822 529 10322	Damper Assy	443	4822 498 10738	Handle Assy
407	4822 380 10278	Light Guide	444	4822 290 80313	Contact Plate
408	4822 410 12502	Button Play	446	4822 492 11779	Spring Compression
409	4822 410 12501	Button Mode	447	4822 492 11781	Spring Compression
411	4822 402 11356	Bracket LCD	448	4822 303 14065	Telescopic Aerial
412	4822 691 10612	Tape Deck CDS-83-VBF-77	449	4822 442 01889	Door Battery
413	4822 492 11061	Spring Recording	451	4822 321 10249	Mains Cord (For -/00/01/11/14)
414	4822 410 12507	Knob Cassette	451	4822 321 10886	Mains Cord (For -/05)
416	4822 402 10126	Lever Recording	451	4822 321 10954	Mains Cord (For -/10)
417	4822 529 10387	Damper Rubber (40 DEG)	451	4822 321 11466	Mains Cord (For -/17)
418	4822 529 10386	Damper Rubber (30 DEG)	452	4822 219 10749	Remote Control
419	4822 691 10747	CD Drive Assy CD97 DA11		4822 256 90463	Ferrite Bar Holder
421	4822 442 01096	CD Lens Cover		4822 736 17084	Instructions Manual (For -/00/05)
422	4822 492 33422	Spring Tension		4822 736 17077	Instructions Manual (For -/01/10/11)
423	4822 528 11345	Dial Drum		4822 736 17078	Instructions Manual (For -/14)
424	4822 528 80907	Pulley Pom		4822 736 17079	Instructions Manual (For -/17)
426	4822 402 11358	Bracket Tuning			
427	4822 535 10648	Shaft Tuning			
428	4822 450 10685	Pointer			
429	4822 410 12505	Knob DBB			
431	4822 410 12506	Knob Mode			
432	4822 529 10322	Damper Assy			
433	4822 410 12503	Knob Tuning			
434	4822 410 12504	Knob Volume			
436	4822 535 60096	Disc			
437	4822 532 13153	Ring (CD Lid)			

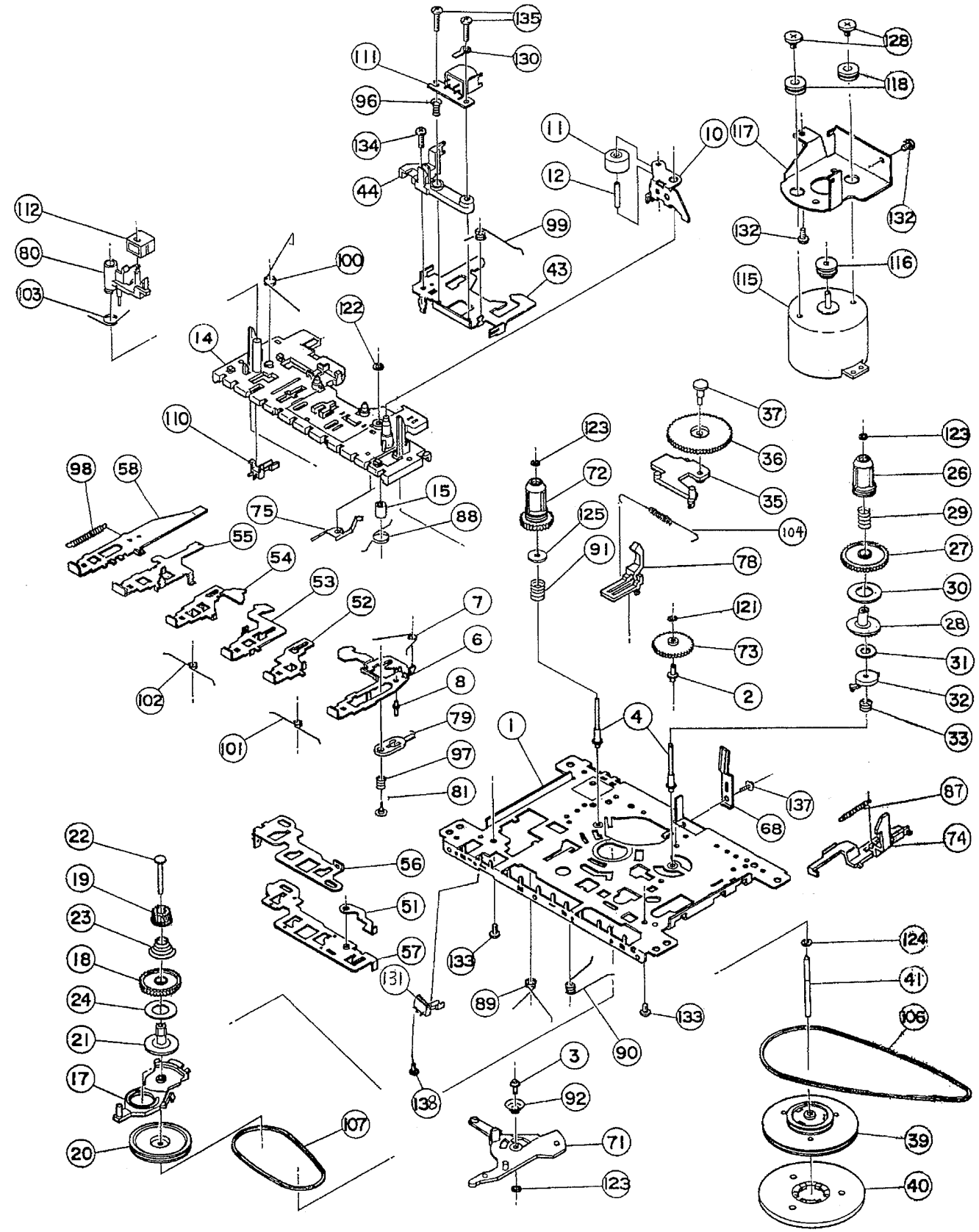
Note : Only those parts mentioned in the are normal service parts.

MECHANICAL PARTSLIST - TAPE DECK

10	4822 528 70849	Pinch Roller Arm (B)	110	4822 278 90721	Leaf Switch
11	4822 528 70695	Pinch Roller Assy	111	4822 249 30218	MS18R-AKONI
74	4822 403 70968	Eject Hook (A)	112	4822 249 40306	E. Head
106	4822 358 31325	Main Belt 45.2 x 1.2	115	4822 361 21565	Motor EG-530AD-9B
107	4822 358 31124	Sub Belt 44.7 x 1.2	116	4822 528 81497	Motor Pulley

Note : Only those parts mentioned in the are normal service parts.

EXPLODED VIEW DIAGRAM - TAPE DECK (CDS-83-VBF-77)



CD 97 (DA11 MK I)

2802	4822 126 12785	47nF Y5V TUB 50V
2803	4822 126 11585	22nF +80-20% Y5V 25V
2804	4822 126 12878	1,5nF 10% 16V
2805	4822 121 51412	560nF 5% 63V
2806	4822 122 33519	470pF 10% 50V
2807	4822 122 33191	22pF 5% 50V
2808	4822 124 22263	220µF 20% 25V
2809	4822 124 40242	1µF 20% 63V
2810	4822 124 40242	1µF 20% 63V
2811	4822 122 33849	150pF 10%Y5P 50V
2812	4822 122 33849	150pF 10%Y5P 50V
2813	4822 126 12339	2,2nF 10% Y5R
2814	4822 126 13677	39pF 5% 50V
2815	4822 126 12882	100nF +80-20% 50V
2816	4822 124 41407	0,47µF 20% 63V
2817	4822 121 42687	3,3nF 10% 63V
2818	4822 124 40242	1µF 20% 63V
2819	5322 121 42386	100nF 5% 63V
2820	4822 121 43526	47nF 5% 250V
2821	4822 124 41579	10µF 20% 50V
2822	4822 122 10167	22nF 30% 25V
2823	4822 124 40769	4,7µF 20% 100V
2824	4822 124 41407	0,47µF 20% 63V
2825	4822 122 10462	15pF 5% NP0
2826	4822 124 41407	0,47µF 20% 63V
2827	4822 124 23178	47µF 20% 16V
2828	4822 124 41579	10µF 20% 50V
2829	5322 121 42489	33nF 5% 250V
2830	4822 122 10319	82pF 5% 50V
2831	4822 121 41856	22nF 5% 250V
2832	4822 124 41576	2,2µF 20% 50V
2833	4822 124 40433	47µF 20% 25V
2834	4822 126 12882	100nF +80-20% 50V
2835	4822 126 12882	100nF +80-20% 50V
2836	4822 124 80791	470µF 20% 16V
2837	4822 126 11585	22nF +80-20% Y5V 25V
2838	4822 126 12882	100nF +80-20% 50V
2839	4822 126 12882	100nF +80-20% 50V
2841	4822 126 13677	39pF 5% 50V
2842	4822 124 40849	330µF 20% 16V
2843	4822 126 13098	5,6nF 20% 16V
2844	4822 122 10466	220pF 10% 50V
2846	4822 122 33519	470pF 10% 50V
2848	4822 122 33519	470pF 10% 50V
2849	4822 122 10466	220pF 10% 50V

2860	4822 124 23178	47µF 20% 16V

3801	4822 052 10478	4R7 5% 0,33W
3802	4822 116 52252	180K 5% 0,5W
3803	4822 111 50499	3M3 5% 0,2W
3805	4822 116 83884	47K 5% 0,5W
3806	4822 116 52256	2K2 5% 0,5W
3807	4822 116 52271	33K 5% 0,5W
3808	4822 116 52263	2K7 5% 0,5W
3809	4822 116 83884	47K 5% 0,5W
3810	4822 116 52257	22K 5% 0,5W
3811	4822 116 52257	22K 5% 0,5W
3812	4822 116 52257	22K 5% 0,5W
3815	4822 050 11002	1K 1% 0,4W
3816	4822 050 11002	1K 1% 0,4W
3817	4822 116 83883	470R 5% 0,5W
3818	4822 116 83883	470R 5% 0,5W
3819	4822 117 11825	1M5 5%
3820	4822 116 52252	180K 5% 0,5W
3821	4822 116 52243	1K5 5% 0,5W
3822	4822 116 52264	27K 5% 0,5W
3823	4822 116 52234	100K 5% 0,5W
3824	4822 116 83868	150R 5% 0,5W
3826	4822 116 83961	6K8 5%
3827	4822 116 52269	3K3 5% 0,5W
3828	4822 116 52297	68K 5% 0,5W
3829	4822 116 83884	47K 5% 0,5W
3830	4822 116 52244	15K 5% 0,5W
3831	4822 116 52251	18K 5% 0,5W
3832	4822 116 83881	390R 5% 0,5W
3833	4822 116 52264	27K 5% 0,5W
3835	4822 116 52184	18R 5% 0,5W
3836	4822 050 11002	1K 1% 0,4W
3837	4822 111 30893	4M7 5% 0,2W
3838	4822 116 52234	100K 5% 0,5W
3839	4822 116 52235	1M 5% 0,5W
3840	4822 050 11002	1K 1% 0,4W
3841	4822 116 52298	680K 5% 0,5W
3842	4822 116 52297	68K 5% 0,5W
3844	4822 116 52291	56K 5% 0,5W
3845	4822 116 52298	680K 5% 0,5W
3846	4822 050 11002	1K 1% 0,4W

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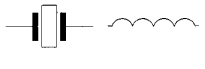
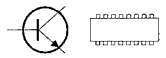
CD 97 (DA11 MK I)

3847	4822 116 52298	680K 5% 0,5W
3848	4822 116 52251	18K 5% 0,5W
3849	4822 052 10478	4R7 5% 0,33W
3850	4822 116 52251	18K 5% 0,5W
3851	4822 116 52244	15K 5% 0,5W
3852	4822 116 83883	470R 5% 0,5W
3853	4822 116 52251	18K 5% 0,5W
3854	4822 116 52243	1K5 5% 0,5W
3855	4822 116 52264	27K 5% 0,5W
3856	4822 116 52303	8K2 5% 0,5W
3857	4822 116 52269	3K3 5% 0,5W
3858	4822 116 80176	1R 5% 0,5W
3859	4822 116 83864	10K 5% 0,5W
3860	4822 116 52207	1K2 5% 0,5W
3870	4822 052 10478	4R7 5% 0,33W
3871	4822 116 52175	100R 5% 0,5W
3880	4822 050 11002	1K 1% 0,4W
3881	4822 050 11002	1K 1% 0,4W
3882	4822 050 11002	1K 1% 0,4W
3883	4822 050 11002	1K 1% 0,4W
3884	4822 116 83882	39K 5% 0,5W
3886	4822 116 52235	1M 5% 0,5W
3890	4822 050 11002	1K 1% 0,4W
3891	4822 050 11002	1K 1% 0,4W
3892	4822 050 11002	1K 1% 0,4W
3893	4822 050 11002	1K 1% 0,4W
3894	4822 050 11002	1K 1% 0,4W
3895	4822 050 11002	1K 1% 0,4W
3896	4822 116 52256	2K2 5% 0,5W
3897	4822 116 52256	2K2 5% 0,5W
3898	4822 116 52256	2K2 5% 0,5W
3899	4822 050 11002	1K00 1% 0,4W



5000	4822 526 10494	Ferrite Bead
5010	4822 526 10494	Ferrite Bead
5020	4822 526 10494	Ferrite Bead
5030	4822 526 10494	Ferrite Bead
5040	4822 526 10494	Ferrite Bead
5050	4822 526 10494	Ferrite Bead
5060	4822 157 50964	Coil 100µH
5803	4822 242 73557	Filter CST8,46MTW-TF01

6001	4822 130 30621	Diode 1N4148



7801	4822 209 13703	IC M65821FP
7802	4822 209 32421	IC TDA1311A/N2
7803	4822 209 90496	IC M62475FP
7804	4822 130 42231	Trans BC557C
7805	4822 209 32852	IC TDA7073A/N2
7806	4822 209 32852	IC TDA7073A/N2

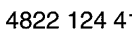
- MISCELLANEOUS -

1802	4822 265 10925	Connector 15P
8000	4822 320 12178	Flexible Foil 15P 65mm

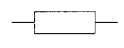
Note : Only those parts mentioned in the list are normal service parts.

MAIN BOARD

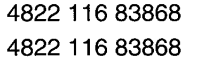
2305	4822 124 41407	0,47µF	20% 63V
2306	4822 124 41407	0,47µF	20% 63V
2308	4822 124 40769	4,7µF	20% 100V
2309	4822 122 10466	220pF	10% 50V
2310	4822 122 10466	220pF	10% 50V
2311	4822 124 40433	47µF	20% 25V
2312	4822 124 40433	47µF	20% 25V
2313	4822 124 41407	0,47µF	20% 63V
2314	4822 124 41407	0,47µF	20% 63V
2315	4822 124 11878	4700µF	16V
2317	4822 124 81029	100µF	20% 25V
2319	4822 124 80195	470µF	20% 10V
2320	4822 124 80195	470µF	20% 10V
2321	4822 124 40746	0,22µF	20% 63V
2322	4822 124 40746	0,22µF	20% 63V
2323	4822 126 11585	22nF +80-20% Y5V	25V
2325	4822 124 23052	100µF	20% 16V
2326	4822 124 40433	47µF	20% 25V
2327	4822 124 40433	47µF	20% 25V
2328	4822 122 33197	1nF	10% 50V
2329	4822 121 51387	10nF	20% 16V
2330	4822 121 51387	10nF	20% 16V
2501	4822 121 51387	10nF	20% 16V
2502	4822 121 51387	10nF	20% 16V
2503	4822 121 42408	220nF	5% 63V
2504	4822 121 42408	220nF	5% 63V



3110	4822 116 52234	100K	5% 0,5W
3116	4822 116 83961	6K8	5%
3117	4822 050 11002	1K	1% 0,4W
3118	4822 050 11002	1K	1% 0,4W
3119	4822 116 83961	6K8	5%
3261	4822 116 52231	820R	5% 0,5W
3262	4822 050 24708	4R7	1% 0,6W
3263	4822 050 24708	4R7	1% 0,6W
3264	4822 116 52256	2K2	5% 0,5W
3265	4822 050 11002	1K	1% 0,4W
3266	4822 116 83876	270R	5% 0,5W
3267	4822 116 83883	470R	5% 0,5W
3268	4822 116 83883	470R	5% 0,5W
3269	4822 050 11002	1K	1% 0,4W
3270	4822 116 83881	390R	5% 0,5W



3271	4822 116 83876	270R	5% 0,5W
3272	4822 116 83868	150R	5% 0,5W
3273	4822 116 83868	150R	5% 0,5W
3305	4822 116 83883	470R	5% 0,5W
3306	4822 116 83883	470R	5% 0,5W
3307	4822 116 52219	330R	5% 0,5W
3308	4822 116 52219	330R	5% 0,5W
3309	4822 116 52244	15K	5% 0,5W
3310	4822 116 52175	100R	5% 0,5W
3311	4822 116 52175	100R	5% 0,5W
3500	4822 102 10447	VR 50K	
3501	4822 116 52256	2K2	5% 0,5W
3502	4822 116 52256	2K2	5% 0,5W
3503	4822 116 52256	2K2	5% 0,5W
3504	4822 116 52256	2K2	5% 0,5W
3505	4822 116 83864	10K	5% 0,5W
3506	4822 116 83864	10K	5% 0,5W
3507	4822 050 11002	1K	1% 0,4W
3630	4822 116 52269	3K3	5% 0,5W
3631	4822 116 52269	3K3	5% 0,5W
3632	4822 116 83961	6K8	5%
3633	4822 116 83961	6K8	5%
3634	4822 116 52264	27K	5% 0,5W
3635	4822 116 52264	27K	5% 0,5W
3800	4822 116 52256	2K2	5% 0,5W
3801	4822 116 52256	2K2	5% 0,5W
3802	4822 050 11002	1K	1% 0,4W
3803	4822 050 11002	1K	1% 0,4W



5100	4822 157 11231	Coil LAN02TB1R0J

6300	4822 130 30621	Diode 1N4148
6301	4822 130 34173	Diode BZX79-B5V6
6302	4822 130 34173	Diode BZX79-B5V6
6303	5322 130 31504	Diode BZX79-B3V3
6304	4822 130 30621	Diode 1N4148
6305	4822 130 34167	Diode BZX79-B6V2
6306	5322 130 31504	Diode BZX79-B3V3
6308	4822 130 31878	Diode 1N4003G
6309	4822 130 31878	Diode 1N4003G
6310	4822 130 31878	Diode 1N4003G

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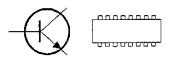
MAIN BOARD

6311	4822 130 31878	Diode 1N4003G



7300	4822 209 31544	IC TA8227P
7301	4822 130 40959	Trans BC547B
7302	4822 130 40959	Trans BC547B
7303	4822 130 41246	Trans BC327-25
7304	4822 130 41246	Trans BC327-25
7305	4822 130 42231	Trans BC557C
7306	4822 130 44503	Trans BC547C
7308	4822 130 40959	Trans BC547B
7309	4822 130 40959	Trans BC547B
7310	4822 130 40959	Trans BC547B

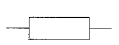
- MISCELLANEOUS -

1007	4822 240 10391	Loudspeaker 4 Ohm
1008	4822 265 20318	Socket Main (Not for -/17)
1008	4822 265 20706	Socket Main 9For -/17)
1009 ⚠	4822 146 11179	Transf (For -/00/05/10/14)
1009 ⚠	4822 146 11175	Transf (For -/01/11)
1009 ⚠	4822 146 11176	Transf (For -/17)
1010	4822 276 13963	CD Door Switch
1011 ⚠	4822 277 21794	Volt Sel (For -/01/11)
1255	4822 265 11317	Connector 1p
1300 ⚠	4822 070 31602	Fuse 1.6A (Not for -/17)
1300 ⚠	5322 253 30116	Fuse 2A (For -/17)
1500	4822 276 12648	Push Switch 2P2T
1560	4822 277 11739	Slide Switch

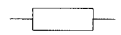
Note : Only those parts mentioned in the list are normal service parts.

FRONT BOARD

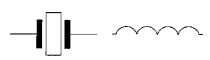
2401	4822 124 41584	100µF 20% 10V
2402	4822 124 22651	1µF 20% 50V
2403	4822 126 12882	100nF +80-20% 50V
2464	4822 122 10466	220pF 10% 50V
2465	4822 122 10466	220pF 10% 50V
2466	4822 122 33197	1nF 10% 50V
2901	4822 122 33519	470pF 10% 50V
2902	4822 122 33519	470pF 10% 50V
2903	4822 124 23432	100µF 20% 10V



3402	4822 116 52234	100K 5% 0,5W
3403	4822 116 52244	15K 5% 0,5W
3404	4822 116 83876	270R 5% 0,5W
3405	4822 116 52238	12K 5% 0,5W
3406	4822 116 52276	3K9 5% 0,5W
3407	4822 116 52243	1K5 5% 0,5W
3408	4822 116 52226	560R 5% 0,5W
3410	4822 116 52238	12K 5% 0,5W
3414	4822 116 83961	6K8 5%
3415	4822 116 83961	6K8 5%
3460	4822 116 52283	4K7 5% 0,5W
3461	4822 116 52269	3K3 5% 0,5W
3462	4822 116 52243	1K5 5% 0,5W
3464	4822 116 52283	4K7 5% 0,5W
3465	4822 116 52283	4K7 5% 0,5W
3466	4822 116 52243	1K5 5% 0,5W
3467	4822 116 52243	1K5 5% 0,5W
3468	4822 116 52283	4K7 5% 0,5W
3469	4822 116 52231	820R 5% 0,5W
3470	4822 116 52231	820R 5% 0,5W
3471	4822 116 52283	4K7 5% 0,5W
3472	4822 116 52231	820R 5% 0,5W
3474	4822 116 52283	4K7 5% 0,5W
3475	4822 116 52234	100K 5% 0,5W
3479	4822 050 11002	1K 1% 0,4W
3480	4822 116 52234	100K 5% 0,5W
3481	4822 116 52257	22K 5% 0,5W
3484	4822 116 52264	27K 5% 0,5W
3485	4822 116 52264	27K 5% 0,5W
3486	4822 116 52269	3K3 5% 0,5W

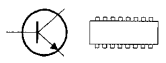


3487	4822 116 52283	4K7 5% 0,5W
3488	4822 116 52257	22K 5% 0,5W
3901	4822 116 52257	22K 5% 0,5W
3902	4822 116 52234	100K 5% 0,5W
3903	4822 116 52234	100K 5% 0,5W
3904	4822 116 52175	100R 5% 0,5W



5401	4822 242 73769	Filter CST4,19MGW
5402	4822 157 11228	Coil LAN02TB101J
5403	4822 157 11231	Coil LAN02TB1R0J

6402	4822 130 30621	Diode 1N4148
6403	4822 130 30621	Diode 1N4148
6404	5322 130 31504	Diode BZX79-B3V3
6405	4822 130 11657	LED (Blue)
6406	4822 130 11657	LED (Blue)



7401	4822 209 17523	IC TMP47PC422F-50560
7402	4822 130 44503	Trans BC547C
7403	4822 130 40959	Trans BC547B
7900	4822 218 11745	Receiver TSOP1736
7901	5322 209 11147	IC HEF4093BT

- MISCELLANEOUS -

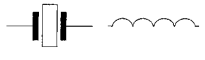
1401	4822 265 10981	Connector 15FE-BT-VK-N
1405	4822 265 10979	Connector 15FE-BT-VK-N
1400	4822 135 00291	LCD Display
1410	4822 276 13114	Tact Switch
1411	4822 276 13114	Tact Switch
1413	4822 276 13114	Tact Switch
1415	4822 276 13114	Tact Switch
1417	4822 276 13114	Tact Switch
8404	4822 320 11974	Flexible Foil 15p 190mm

Note : Only those parts mentioned in the list are normal service parts.

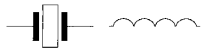
TUNER BOARD

2101	4822 122 33195	100pF 10% 50V
2102	4822 122 33848	47pF 5%SL 50V
2103	4822 124 41579	10µF 20% 50V
2104	4822 124 41579	10µF 20% 50V
2105	4822 122 33191	22pF 5% 50V
2106	4822 125 50681	Variable Capacitor
2108	4822 126 13508	3.3pF 10% NP0 50V
2109	4822 126 14482	27pF 5% 50V N470
2110	4822 126 12229	8,2pF N750 50V
2112	4822 124 40433	47µF 20% 25V
2113	4822 124 40746	0,22µF 20% 63V
2114	4822 126 12787	330pF 10% Y5V 50V
2115	4822 124 40769	4,7µF 20% 100V
2116	4822 121 70619	22nF 10% 50V
2116	4822 121 43145	33nF 10% 50V
2117	4822 124 40242	1µF 20% 63V
2118	4822 124 40242	1µF 20% 63V
2119	4822 121 70619	22nF 10% 50V
2119	4822 121 43145	33nF 10% 50V
2120	4822 124 40242	1µF 20% 63V
2121	4822 124 41407	0,47µF 20% 63V
2122	4822 124 41407	0,47µF 20% 63V

3101	4822 100 20167	50K 30% LIN 0,1W
3102	4822 116 52297	68K 5% 0,5W
3104	4822 116 52256	2K2 5% 0,5W
3106	4822 116 52231	820R 5% 0,5W
3107	4822 116 52182	15R 5% 0,5W
3108	4822 116 52182	15R 5% 0,5W
3109	4822 116 52176	10R 5% 0,5W
3113	4822 116 52234	100K 5% 0,5W
3114	4822 116 52234	100K 5% 0,5W
3115	4822 116 52226	560R 5% 0,5W

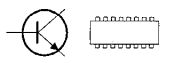


5101	4822 157 70513	Coil FM
5102	4822 157 70731	Coil MW/ANT
5104	4822 157 11843	Coil MD7B-01F
5105	4822 157 71145	Coil 270µH
5106	4822 157 70499	Coil IFT AM



5107	4822 242 81154	Filter KMFC5058-Z
5108	4822 156 11146	Coil IFT AM

6101	4822 130 30621	Diode 1N4148
6102	4822 130 30621	Diode 1N4148



7101	4822 209 32746	IC TEA5711T/N2
7102	4822 130 44503	Trans BC547C

- MISCELLANEOUS -

1003	4822 256 90463	Ferrite Bar Holder
1003	4822 526 10176	Ferrite Bar 5x13x55mm

Note : Only those parts mentioned in the list are normal service parts.

RECORDER BOARD

2703	4822 124 81151	22µF	50V
2704	4822 124 81151	22µF	50V
2706	4822 124 40433	47µF	20% 25V
2707	4822 124 80144	220µF	20% 25V
2708	4822 124 42446	100µF	20% 10V
2709	4822 124 42446	100µF	20% 10V
2710	4822 124 22726	4,7µF	35V
2711	4822 124 81151	22µF	50V
2712	4822 126 12339	2,2nF	10% Y5R
2713	5322 122 32311	470pF	10% 100V
2714	4822 126 12339	2,2nF	10% Y5R
2715	4822 126 13174	33nF	+80-20% 16V
2716	4822 126 11585	22nF	+80-20% Y5V 25V
2717	4822 121 10686	4.7nF	10% 50V
2718	4822 122 10466	220pF	10% 50V
2719	4822 121 51305	15nF	10% 50V
2720	5322 122 32311	470pF	10% 100V
2721	4822 126 12339	2,2nF	10% Y5R
2722	4822 126 13174	33nF	+80-20% 16V
2723	4822 126 11585	22nF	+80-20% Y5V 25V
2724	4822 121 10686	4.7nF	10% 50V
2725	4822 122 10466	220pF	10% 50V
2726	4822 121 51305	15nF	10% 50V
2727	4822 126 12339	2,2nF	10% Y5R
2728	4822 126 11714	4,7nF	20%
2729	4822 126 11714	4,7nF	20%
2730	4822 126 14316	680pF	10% 50V Y5P
2731	4822 121 41857	10nF	5% 250V
2732	4822 126 11714	4,7nF	20%
2733	4822 121 70619	22nF	10% 50V
2736	4822 126 14316	680pF	10% 50V Y5P
2737	4822 126 14316	680pF	10% 50V Y5P
2738	4822 122 33519	470pF	10% 50V
2739	4822 122 33519	470pF	10% 50V
2740	4822 124 42446	100µF	20% 10V

3700	4822 116 83883	470R	5% 0,5W
3701	4822 116 83883	470R	5% 0,5W
3702	4822 116 52175	100R	5% 0,5W
3703	4822 116 52195	47R	5% 0,5W
3704	4822 116 83883	470R	5% 0,5W

3705	4822 116 83872	220R	5% 0,5W
3706	4822 116 52245	150K	5% 0,5W
3707	4822 116 52245	150K	5% 0,5W
3708	4822 116 83961	6K8	5%
3709	4822 116 83961	6K8	5%
3710	4822 116 83864	10K	5% 0,5W
3711	4822 116 52207	1K2	5% 0,5W
3712	4822 116 52303	8K2	5% 0,5W
3713	4822 116 52195	47R	5% 0,5W
3714	4822 116 83883	470R	5% 0,5W
3715	4822 116 83872	220R	5% 0,5W
3716	4822 116 52245	150K	5% 0,5W
3717	4822 116 83961	6K8	5%
3718	4822 116 83961	6K8	5%
3719	4822 116 83864	10K	5% 0,5W
3720	4822 116 52303	8K2	5% 0,5W
3721	4822 116 52207	1K2	5% 0,5W
3722	4822 116 52257	22K	5% 0,5W
3723	4822 116 52257	22K	5% 0,5W
3725	4822 116 52256	2K2	5% 0,5W
3726	4822 116 52256	2K2	5% 0,5W
3727	4822 116 52256	2K2	5% 0,5W
3729	4822 116 52256	2K2	5% 0,5W
3730	4822 116 52186	22R	5% 0,5W
3731	4822 116 52297	68K	5% 0,5W
3732	4822 116 52176	10R	5% 0,5W
3733	4822 111 30893	4M7	5% 0,2W
3734	4822 116 83864	10K	5% 0,5W
3735	4822 050 21002	1K	1% 0,6W
3743	4822 116 52269	3K3	5% 0,5W
3744	4822 116 52269	3K3	5% 0,5W
3745	4822 116 83864	10K	5% 0,5W
3746	4822 116 83864	10K	5% 0,5W
3747	4822 116 52191	33R	5% 0,5W
3748	4822 116 52283	4K7	5% 0,5W
3749	4822 116 52283	4K7	5% 0,5W
3750	4822 116 52176	10R	5% 0,5W

5701	4822 157 10371	Coil 100kHz

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RECORDER BOARD

6704	4822 130 30621	Diode 1N4148
7702	4822 130 40981	Trans BC337-25
7705	4822 209 32918	IC AN7318S
7706	4822 130 44503	Trans BC547C
7707	4822 130 44503	Trans BC547C

- MISCELLANEOUS -

1707	4822 277 11504	Push Switch

Note : Only those parts mentoned in the list are normal service parts.